DOCUMENT RESUME

ED 196 598 RC 012 412

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TITLE	Plan for a Southeastern Rural Education Information System.
INSTITUTION	Auburn Univ., Ala. School of Education.
SPONS AGENCY	Southeastern Regional Council for Educational Improvement, Research Triangle Park, N.C.
PUB DATE	Sep 80
NOTE	167p.
EDRS PRICE	MF01/PC07 Plus Postage.
DESCRIPTORS	Data Bases; Data Collection; *Educational Improvement; *Educational Policy; *Information Systems; *Needs Assessment; Policy Formation; Program Development; Quality Control; Questionnaires; *Rural Education; State Agencies; Surveys; *Systems Development
IDENTIFIERS	Alabama Resource File; Southeastern Regional Council Educ Improvement; United States (Southeast)

ABSTRACT

A plan is presented herein for development of a Rural Education Information System for the 10 states which comprise the Southeastern Regional Council for Educational Improvement. Since the Council considers its principal function to be support of educational policy analysis and formation in its member states, the information system design presented in this paper is oriented toward policy support. The difficulties of developing such a system are listed as follows: conventional information systems have not generally been successful in supporting decisions at the upper management levels; the nature of policy development is such that supplying needed information is inherently difficult; the reference system consists of the state education agencies of 10 states and is thus extremely complex; and problems of data acquisition and quality control are serious. These problems, which must be addressed if the plan is to succeed, are discussed and considered in the plan which is presented. Appendices include a 47-page literature review on the status and needs of rural education in the Southeast, the questionnaires used in two rural education information needs surveys, the item statistics by state and by respondent category, the form needed for inclusion of a program in the Alabama Resource File, and information on the data bases used. (AN)

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Plan for a Southeastern Rural Education Information System

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September 1980

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PLAN FOR A SOUTHEASTERN RURAL EDUCATION INFORMATION SYSTEM

I. Background

In the decades since World War II, rural education has not received the attention it merited, either in terms of general needs or of the particular populations involved. Yet, some of the neediest people and some of the greatest educational problems exist in rural areas. The problem is especially serious in the Southeast.

Approximately two-thirds of the nation's school districts and one-third of its students are located in non-metropolitan areas, including over 20 percent of all Blacks and Hispanics, 70 percent of all Native Americans, and 800,000 migrant workers (Schultz, 1979, p. 4). There are more students in non-metropolitan schools than in central city schools.

A review of the literature on rural education in the Southeast is given in Appendix A of this report. From this review are a number of other statistics which highlight problem situations in rural areas:

.Median family income is lower in rural areas; in 1975 it was 22 percent below metropolitan level.

.The poor are disproportionately concentrated in rural areas. In non-metropolitan areas, 16.7 percent of families are below poverty level, while only 11.1 percent are below in metropolitan areas.

.Non-metropolitan poverty is concentrated in some regions, with 60 percent in the South, and it is concentrated among some racial and ethnic groups, especially Native Americans, Blacks, and Hispanics.

.The economic base for many rural communities continues to be narrow, creating difficulties in school finance.

.Many rural areas have very low population density.

.There is clear evidence of a general achievement/attainment problem in rural schools.

.Rural schools tend to be below others in the nation in terms of their offerings, services, and financial resources.

Related to these special circumstances are a number of needs particular to rural education. These include: 1) More descriptive and research information on rural communities, areas, educational activities, and populations; 2) Special preservice and inservice training for rural educators, including classroom teachers and administrators; 3) Perception and treatment of rural education in the larger context of rural development; 4) Development of and exchange of information on programs developed for rural students; 5) Study and attention to special education needs; 6) Attention to the problems of financing rural schools; and 7) Considering anew the issues of consolidation and population density in light of energy problems and of developments in technology.

The problem in this set which needs to be addressed first is the lack of sufficient information. This is prerequisite in that information must be the basis for assessment and planning relative to other rural education needs.

An Information System to Support Policy Development in Rural Education. This paper presents a plan for development of a Rural Education Information System for the 10 states which comprise the Southeastern Regional Council for Educational Improvement. The Council considers its principal function to be

support of educational policy analysis and formation in its member states. Accordingly, the information system design presented in this paper is oriented toward policy support. As the system becomes operational, there may be other uses, such as supporting academic and other research, but these were not considered priorities in the design.

The challenge of developing such a system is difficult for several reasons. Conventional information systems have not generally been successful in supporting decisions at the upper management levels. The nature of policy development is such that supplying needed information is inherently difficult. The referent system consists of the state education agencies of ten states and is thus extremely complex. Problems of data acquisition and quality control are serious.

Each of these problems must be addressed if the plan is to succeed. In the material which follows, they are discussed, and they are taken into account in the developmental plan which is presented.

II. Policy Development and Related Information Needs

The Nature of Policy Development. The dictionary defines policy as "a settled course adopted and followed by a government, institution, body or individual." Determining policy, therefore, is a matter of setting courses of action.

It is not just any courses of action, however. The term "policy" is reserved for those decisions which have the widest ramifications and longest time perspectives, and which generally require the most information and contemplation. This is the strategic planning level. Decisions which seem trivial

and repetitive and which demand little creative thought are considered "routine," while those which involve some middle level of complexity, have wider ramifications, and demand more thought are referred to as "tactical." Policy making is a parameter-shaping act which is of key importance to the long range; it sets the long term course of the organization.

Policy development must be dynamic and future oriented. It involves strategic moves that direct an organization's critical resources toward perceived opportunities in a changing environment. It consists of 1) the intellectual activities of perception, analysis, and choice which comprise decision making, 2) the social process of implementation through organizational structure, systems of measurement and allocation, and systems for reward and punishment, and 3) the dynamic process of revision as changes in organizational resources and in the environment alter the context of the original policy problem.

Policy making is also a political act. The policy maker must allocate scarce resources and must mediate among conflicting sets of values and interests. He must balance each individual issue off against a wide range of other issues, including not only those which presently exist but those that are likely to exist in the future. Almost inevitably, there is a process of negotiation in which a course of action acceptable to the different interests is selected. This is clearly a political process, and the idea of a single best solution, dictated by the objective facts of a situation, is misleading.

Experts in the area agree that bargaining is at the heart of the policy process. Bauer (1968, p. 15) points out that the interests of people and organizations are multiple and complex and policy problems are sufficiently complex that, given the objective features of a situation, organizations or individuals

could wind up on any side of the issue. It finally boils down to the perceived costs and perceived benefits to the different interests of different alternatives. No value is absolute in this process; in the real world, units of one value have to be traded off against units of another.

An information system to support policy development must take into account the political aspects if it is to have any chance of success.

In much of the management literature, policy making is said to be the province of "top management." Making tactical decisions is the province of "middle management," and making routine decisions is the task of "line management." The type of management in which one is engaged must be defined in context, however. In multi-layered organizations, the level of organization is critical in defining what is policy and what is not; one man's policy may be another man's tactics. To the Chief State School Officer, the local superintendent is a middle manager, but to the principals in the systems, the superintendent is a policy maker. There is therefore no single set of decision-making acts which can be uniquely classified as policy development. This point is of crucial importance in designing an information system to support the policy process, for the information which is needed at one organizational level will be different from that needed at another level.

Support of Policy Development Through Information. All decision making requires information of some sort, whether or not the information is supplied formally. Some decisions require only a small amount of information, and some require a great deal. To understand why there is a difference, it is necessary to realize that, at the most general level, the purpose of information is to

reduce uncertainty. As uncertainty increases, the need for information also increases. More complex situations inherently involve more uncertainty, as do more unstable environments.

In supporting policy development, information must first help to establish the objective aspects of the situation. This involves:

1. Indicating the state of systems of interest at any point in time--what is their current status in relevant respects?
2. Establishing trends, so that which is happening now can be compared to what has happened at different times in the past, and so that there can be some basis for projecting future events.
3. Reducing uncertainty about the environments of systems of interest--about their current state and about conditions which are likely at different times in the future and the demands these will place on the organization.

Information is also needed to facilitate the process of negotiation by helping the interested parties assess more rapidly and accurately which among the possible propositions that are advanced stand some chance of being accepted. This means first an ability to forecast what the objective outcomes will be. It also means an ability to forecast what the reaction to these outcomes will be at the relevant social system level.

"Forecast" may, of course, refer to shorter or longer time periods. Forecasting reactions to action taken is a short-term matter which can often be supported successfully with sample surveys. In general, forecasting is more accurate the shorter the time period involved.

The use of information to establish objective aspects and to facilitate negotiation is discussed above. A third general use is in clarifying and enlarging action alternatives. Knowledge (or technology) is transferred from external sources through information activities. Such transfer increases an organization's resource base and provides a wider range of responses with which to meet challenges and seize opportunities.

Information Needed at Different Organizational Levels. Information should serve the purposes outlined above in supporting policy development, but seldom does it succeed completely. The question is not whether seemingly needed facts have been delivered, but whether the uncertainty of policy makers on key issues has been reduced and whether their decisions are impacted.

Many observers have noted the problem of data overload (Ackoff, 1967; Clemson, 1978; Beer, 1972). As Beer states it, most information systems engulf decision makers in "a sea of useless facts." What is needed is information, not facts, and "facts become information only when something is changed" (p. 31).

Relative to the complex information system with which this paper is concerned, there is therefore a general problem of determining which information on rural education will impact policy development. As previously noted, however, a complex, multi-level organizational structure is involved, and there will be policy makers at a number of different organizational levels.

There is no way that the same information can serve policy needs at the different organizational levels involved. Hayman, et al (1979) point out that there is involved a semantic criterion, which has to do with the meaning of the data to the receiver. They conclude that information is more likely to have

meaning to a decision maker if it is from an organizational level close to that at which he or she operates, that is, if it is in the professional "life space" (p. 37).

Geiger and Hansen (1968) carry this point further with their discussion of the factors that determine which information will be perceived as relevant by a policy maker. The factors are:

1. The objective or rational aspects of the problem. This involves connection between the empirical data that can be supplied and the economic and social phenomena which the policy makers are responsible for influencing.
2. Values and norms relevant to the situation. The cultural system provides the values and norms in terms of which policy makers formulate goals, the rules governing their efforts to achieve them, and the standards for judging their performance.
3. The nature of the particular institutional system. This includes the organizational structure, its methods of functioning, its reward and reinforcement mechanisms, the characteristics of the personnel involved, and the external relationships and pressures on the institution.

These three general factors act jointly. Institutional factors interact with rational, intellectual considerations and with cultural influences to determine the information that policy makers will consider relevant and the specific ways that they will utilize the information. These factors must be taken into account in determining the form and content of needed information.

Policy Development and Rural Education. What kinds of information are needed to support policy development relative to rural education? Or, perhaps

a better way to phrase this question is: What is unique about rural education that causes it to merit separate consideration in policy analysis, and what are the related special information needs?

Fratoe (1979) points out that the uniqueness of rural education lies in the social and demographic conditions found in rural America, and not in its educational functions. He notes that such functional concerns as mastering the basics, understanding one's community, developing human relationships, achieving self-realization, etc., apply in all educational settings, whether urban or rural. Eddington (1980) stresses strongly that rural education must be conceived in the larger context of rural development, and that much work in the United States has treated education in isolation.

Geiger and Hansen (1968) state that, in general, economic variables have been the primary concern of policy makers in the United States, with a tendency to regard the economic system as autonomous, and economic changes as somehow more fundamental than and automatically including changes in the cultural, social, and political systems (p. 339). In education, they say, comparatively little attention is paid to studying and finding ways of taking into account the relevant social and cultural factors (p. 362).

Changes in education, as one component of the larger system, do not occur in the absence of changes in the economic, cultural, social and political systems. These are all interrelated, and in rural areas, they are interrelated in ways that make the setting unique. It follows that policy making for rural education must take these interrelationships into account, and that the supporting information system must provide means of doing it.

Given this need and the points made previously in the discussion, it is clear that simply supplying descriptive statistics, no matter how comprehensive they may be nor how they are organized, will not suffice. What is necessary, rather, is a careful apolication of modeling. Descriptive statistics are needed, of course, to build and operate the models, but the information system must go well beyond mere descriptions of what is.

III. Objectives of the Information System

The Southeastern Rural Education Information System will be operated at the level of the Council, and in its data base and delivery mechanisms, it will be a part of the Council's larger general information system.

Its primary purpose will be to support policy development relative to rural education in the 10 Southeastern states which comprise Council membership. The linkage is from the Council to state departments of education (SDE's) and from them to other organizations within the state. There are therefore a number of organizational levels, from regional to individual school in the structure.

Within the context, the objectives of the system will be:

1. To supply information which is used by and influences policy makers in their decisions on rural education throughout this complex organizational structure.
2. To determine the sphere of concern and relevant aspects thereof for each policy level, and to design models which supply information support needed at each level.

3. To support the rational/empirical aspects of policy development by supplying information which:
   a. Indicates the state of systems of interest at the current time.
   b. Establishes trends among key descriptors, so that changes which are occurring can be understood and future conditions can be forecast.
   c. Establishes clearly the relationship of the environments of systems of interest to the systems themselves, and establishes expectations of environmental conditions which may exist in the future and the demands these will place on the organization.
4. To support the political aspects of policy development by providing a means for estimating the likely objective outcomes of actions taken, the likely effects of these outcomes on social and economic systems within the system of interest, and the reaction of relevant audiences to actions and outcomes.
5. To provide access to knowledge sources which can increase a system's resource base and make available a wider range of responses with which to meet challenges and seize opportunities.
6. To take into account the unique aspects of rural education by considering educational functions within the context of relevant social, cultural, and economic factors. These factors will be localized to the organizational level of policy concern.
7. To develop the models needed to operationalize the objectives above.
8. To determine the descriptive information needed by this system, and to secure this information in a manner which involves the least expense

and least interruption of educational systems but which, at the same time, assures quality control of data elements.

9. To design and develop the computer and other communications technology systems needed for the system; to design these according to protocols established by the Council so that the Rural Education Information System can function as an element of the Council's general information system.

IV. System Contents

To meet the objectives stated in Section III, there must be a determination of what the information system contents will be, that is, what data and information elements will literally be housed in it. Other major concerns are how the data are to be secured, how inquiries are to be made to the system, how delivery of information is to occur, and overlaying all of this, how the system is to be initially implemented, developed, and refined.

This section deals with contents, as these are currently conceived. System contents divide into three general categories: 1) system status and cybernetic data, 2) instructional program data, and 3) resource data.

A. System Status and Cybernetic Data

The term, "cybernetic," is introduced here, reluctantly because of the danger of appearing to resort to buzz words. No other single term, however, seems to imply what this category means. Cybernetics is a relatively new science which deals with control processes, especially under conditions of high complexity and high uncertainty. Control under such conditions is also the concern of educational policy makers--how to guide complex organizations

toward some goal or set of goals. In general, the information which can assist them in policy setting can be subsumed under the rubric, cybernetic.

This category will contain descriptive data, and it will also contain the models through which these data are transformed into information.

1. Descriptive Data

In the process of preparing this plan, a purposesive sample of approximately 15 persons each from eight of the Council states was developed.* The sample represented a variety of persons, from local superintendents to rural sociologists, concerned with rural education. A two-stage, delphi-like survey process was used to develop a listing of information items considered important in making decisions about rural education. The open questionnaire used in round one is given in Appendix B and the closed questionnaire from round two is in Appendix C. Sixty-nine respondents from the eight participating states returned questionnaires in each round.

The second round questionnaire had 140 items. Answers to these were categorized first by state and then by relevant category of respondents. The five relevance categories were 1) rural educator, 2) regional or state educator, 3) local cooperative extension agency member, 4) post-secondary educator, and 5) rural government representative. Results by state are given in Appendix D and by respondent category in Appendix E.

*All 10 states were asked to supply names, and follow-ups by letter and telephone were made. For a variety of reasons, two states did not respond, and thus were not represented.

The following items received the highest importance ratings.

TABLE 1

Highest Rated Data Items
from Survey

Student Data

-Age
-Grade level
-Life goals
-Career aspirations
-Self concept
-Past academic performance
-Attitudes toward education
-Work values

Community Data

-Recreational facilities

Parent Data

-Educational attainment
-Literacy rate
-Attitudes toward education
-Attitudes toward schools

School System Data

-Financial structure
-Vocational education facilities
-Parent teacher organizations
-Teacher incentives

Based on the survey and the literature review, the system will begin with the data items listed below.

.For students:

-Past academic performance

-Age

-Grade level

-Race

-Educational attainment of parents

-Attitudes toward education

-Attitudes toward self

-Life goals

-Work values

.For school systems:

-Expenditure per pupil

-Total budget amount

-Proportion of funds from local, state, and "soft money" sources

-Total student enrollment

-Average daily attendance

-Student/teacher ratio

-Average teacher salary

-Curricular offerings

-Vocational education facilities

-Parent/teacher organization activities

.For communities:

-Income level and distribution

-Population density

-Mass media availability

-Accessibility of services, cultural items, and other resources

-Attitudes toward education

-Satisfaction with local schools

-Literacy rate

-Recreational facilities availability and use

-Rural development activities

-Political participation and efficacy

Analysis Units and Data Storage Format. The system will be designed to support policy makers at a number of different organizational levels, each of which constitutes an analysis level. Some data can be obtained by aggregating from lower to higher levels; other data will be specific to the particular level.

A question is the lowest analysis to be included. An argument can be made for beginning with the individual school. Many districts may be classified as metropolital and still have individual schools which are isolated and rural in character. The argument is that using district-level data would mask any ruralness involved and could possibly compromise some of the relationships being studied.

Trying to begin at the level of the individual school would pose great practical difficulties, however, and would increase the cost of the system beyond reasonable levels. There are more than 14,000 individual schools in the 10-state region, and trying to collect and maintain data on each would be a tremendous undertaking. The aim of the project is to support policy development, and not to keep census-type records.

The aim can be met at less cost by careful development of models and by judicious use of sampling when the nature of particular relationships requires validation or study. The recommendation, therefore, is to make the individual school district (or "system" in some states) the lowest level for which data will be maintained. There are some 1,000 districts in the region, less than 10 percent of the number of individual schools.

Data will initially be collected by district in their "rawest" form; no averages, ratios, or other derived figures will be used. In this way, many potential definitional problems (such as how average daily attendance is computed) can be avoided.

"Higher" levels of analysis will include intermediate or regional service agencies, where these exist; development districts, where these exist;

the state or SDE level; and the regional level. At each level, data which have been aggregated from lower levels will be maintained as follows:

.For each variable X_i:

N = number of cases

$\sum X_i$ = sum of scores over all cases

$\sum X_i^2$ = sum of scores squared over all cases

b_i = slope (as time series are developed)

.For each pair of variables X_i and X_j:

$\sum X_i X_j$ = sum of products over all cases

Data at each higher level which are specific to that level, such as the number of employees in a state education department, will initially be kept in their "rawest" form.

With this approach, only a small amount of data need be maintained on the computer, and the enormous files which contain volumes of data on individual cases are avoided. The summary data listed above will allow conclusions about distributions, about trends, and about interrelationships and interactions.

For the purposes at hand, a distribution is sufficiently defined by its mean, variance, skewness and kurtosis. The mean, of course, is defined as: $\overline{X} = \frac{\sum X}{N}$.

The other three descriptors correspond to the second, third, and fourth moments about the mean. Where $X_i = \overline{X} - X_i$, these are:

$\frac{\sum_x^2}{N}$ = variance

$\frac{\sum_x^3}{N}$ = skewness

$\frac{\sum_x^4}{N}$ = kurtosis

Distributions--either different sets of data from the same group or sets from different groups--can be compared according to whether or not statistically significant differences exist on any of the four descriptors.

A trend is sufficiently defined by its current value (a mean in many cases) and by its slope. As new data are received, they are checked for changes in value ("step" changes) and for changes in slope (Harrison and Stevens, 1971).

The descriptors and the sums of products are sufficient to support a wide range of relational analyses through the multiple regression approach (Kerlinger and Pedhazur, 1973).

The goal is to produce the mathematical and statistical support needed at different policy levels while avoiding definitional difficulties inherent in using derived figures and while keeping collection and maintenance costs at a minimum.

2. Model Development and Use

The data described above will be maintained in such a way that it is readily available to standard statistical and mathematical analysis. In many (perhaps most) "information" systems, this is as far as development proceeds. Why go further in this case?

The answer is that the purpose is to serve policy analysis and development, and not some other purpose such as supporting research. The complexity of the

situation was previously noted, as was the fact that those making policy for rural education must consider the social, cultural, economic, and political systems with which the educational system interacts, that is, must consider the total community. The number of data items needed to describe each relevant aspect of each of these systems, all of the relevant relationships, and all of the trends builds up very rapidly. In trying to use traditional statistical approaches in this situation, the volume of data quickly becomes so great that just handling it is a major task, and its meaning is very difficult to decipher. The policy maker has neither the time nor patience to deal with information in this way.

The need is to reduce this volume to its simplest relevant elements, and to deliver it to the policy maker in concise, easily-understood form. This is what modeling is designed to do. A model may be described as a representation of a system by another system. The model is similar in key aspects to the system it represents, but it is always reduced in complexity so that understanding is heightened. A model depicts the relevant aspects of the system it represents, and it ignores the irrelevant aspects.

What is relevant depends on the purpose at hand. A model may be a physical representation (like a model train), it may exhibit similar behavior in certain respects (like a Link trainer), it may be a statement in symbolic logic, or it may represent certain activities and outcomes in mathematical form. None of these is intrinsically superior to the other. The value of any of them in a particular situation depends on the information it produces and on the reduction in uncertainty which results.

A model can be helpful in several ways:

.It can help to explain a complex situation.

.It can predict future outcomes and serve as a forecasting tool.

.It can aid in investigation of different ways to respond to future challenges.

Models do not have to be inordinately complex to be useful. It has been found, in fact, that the use of several smaller and simpler models which describe different aspects of a situation is likely to be more effective than attempting to develop one large, complex model.

Types of Models to be used. A simple type of model which is often useful is the profile. A profile is prepared for each analysis unit or each type of analysis unit relevant to the organizational level. It consists of a curve connecting the points representing values or relative position of each of the relevant descriptors, where these are rendered comparable by statistical treatment. Through comparing profiles, differences in analysis units can quickly be spotted. A profile is static; it shows the state of the system represented at the time the measurements were taken.

Another type of model is needed to show dynamic relationships. A relatively simple way to do this is with flow models, which show the key elements of a system, the pathways through which materials, information, people flow through the system, and the dynamic interactions among pathways. Flow models provide a time dimension, and they indicate interactions among system elements in addition to current status. An example of a flow model is given in Figure 1.

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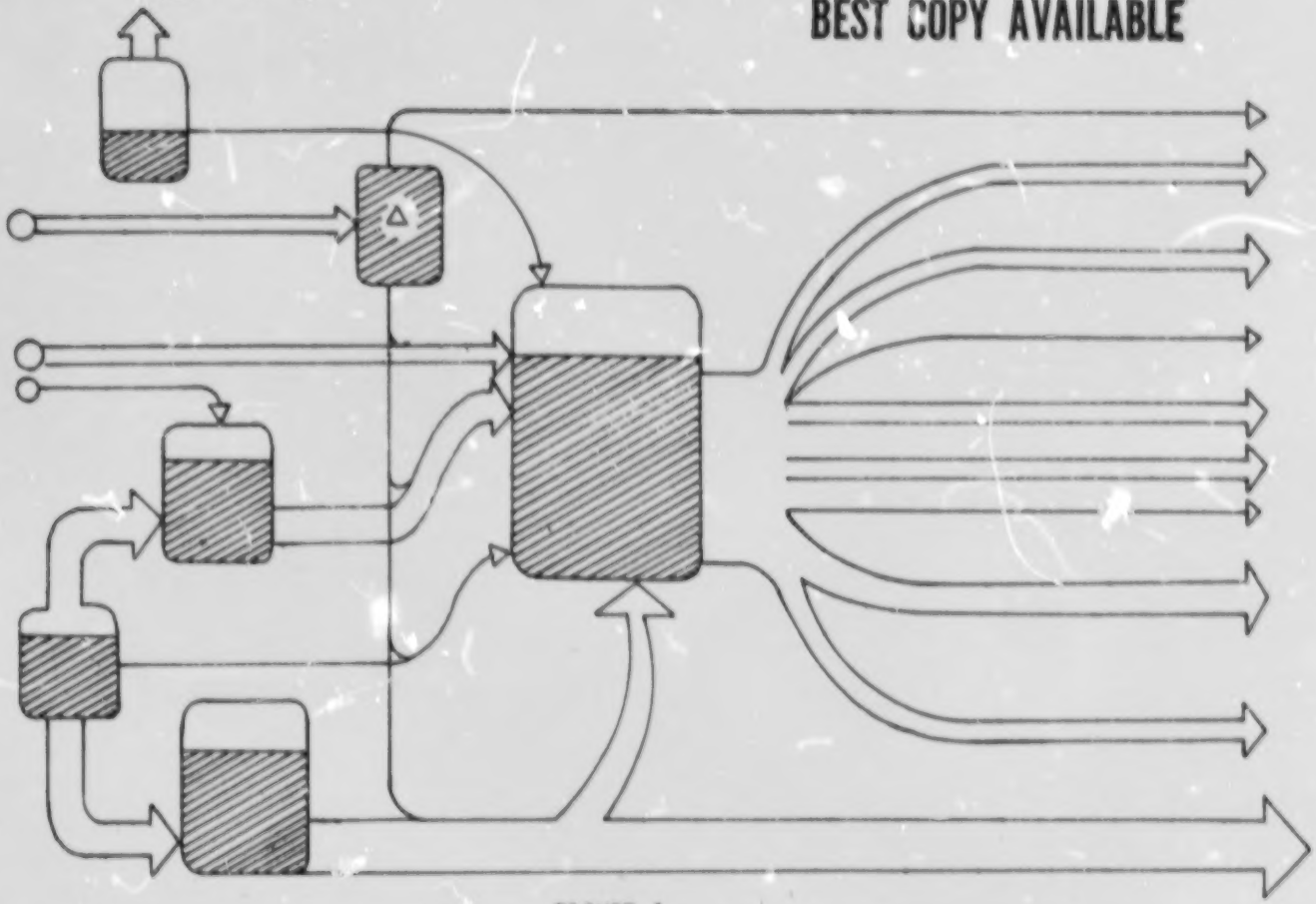

FIGURE 1

In this model, the boxes indicate processing locations (classrooms, the central office, a regional unit) and the arrows indicate movement of relevant entities (students, materials, information, money). The size of the boxes indicates capability and the shaded section indicates the extent to which capability is currently being used. The size of the arrows indicates flow rates. A graphic display of this model can be produced by a computer in real time, using relevant data.

Note that a flow model is context specific; it represents relevant system aspects at particular organizational levels. Different flow models, therefore, will be prepared for each policy decision level, with the aim each time to represent those aspects which are the concern of and have meaning to particular policy makers.

Developing and Using the Models. The aim will not be to build a model for every analysis unit (every school district, for example) but to develop models which represent different identifiable types of units. Relevant characteristics of each type will be established, and when a particular unit is of concern, the type category to which it belongs can be determined through examination of its key descriptors.

The flow models will be built through three stages:

1. A classification scheme for rural communities will be devised. A coordinate system for such basic dimensions as economy type, spatial extension, and mobility of population will be sought, and this will provide a framework within which clusters would be sought, and the clusters will provide categories or "ideal types" of communities. The use of profiles will be very important at this stage.
2. The role of the educational system in each community type will be established. This will involve making flow models to relate education (its processes, facilities, people, as appropriate) to other key elements of the community. Each type of community can be expected to have its own distinctive climate, culture, lifestyle, social participation, political participation, etc.
3. Indicators for the state of education within each rural community type will be devised. Values of the indicators at one point in time depict the state of the referent system. Successive values of the different indicators form time series and indicate relative stability, as well as the direction and rate of change that is occurring. Only some six to 10 indicators are needed, and, after the model is operational, current values of the indicators are of interest to policy makers

only when they indicate that the referent system is changing in some pertinent aspect.

Prime objectives will be to make the models intelligible to those using them and to make them adaptable to change. Comprehensive testing is needed to ensure that results produced are reliable. Flexibility is the key, and the system must be built so that the models can incorporate additional variables whenever necessary and allow for new relationships between variables to be introduced.

B. Information on Instructional Programs

Section A above describes the part of the information system which allows policy makers to understand and monitor the particular organizations which are their primary concerns. Another part of the policy task is determining what steps to take to cause desired changes, that is, to reset courses of action. A key constraint is the options which policy makers know to be available.

Ashby's law of requisite variety applies directly in this situation. This law states that the variety within a system must be at least as great as the environmental variety against which it is attempting to regulate itself (Ashby, 1964). With reference to human organizations, this law can be stated in more usual language: it says simply that the courses of action available to the organization must be adequate to respond to challenges which are likely to be faced. If my spouse has a heart attack and I do not know how to administer cardio-pulmonary resuscitation, I lack requisite variety.

This problem is handled in part by increasing the variety pool, that is, by broadening the available resource base. This action must be targeted, of course. The resources which are added must be those which stand some probability of being needed.

Relative to this problem, there are two crucial needs as regards policy development in rural education. First is a dearth of information on instructional programs which have been developed for specific rural environments. Second is a lack of communication as to human resources (special expertise) which can be applied in different need situations.

1. Broadening the Resource Base for Instructional Programs

A good deal of curriculum development, oriented toward specific rural circumstances, is undoubtedly needed. At the same time, many instructional materials designed for use in these settings undoubtedly exist already, but their existence is not generally known.

Everette Edington, Director of the ERIC Clearinghouse on Rural Education and Small Schools (ERIC/CRESS), served as a consultant to the planning project through which this paper was prepared. Dr. Edington states that there is a general lack of rural-oriented instructional materials in ERIC, and that this problem is particularly acute for the Southeast. There is a great need, therefore, to locate the programs that exist, and to make information on them generally accessible.

In addressing this need, the information system will work closely with ERIC/CRESS and with other components of the dissemination network which NIE has helped to establish. This is the most economical way to address the need, and it is consistent with the general strategy of using existing resources and facilities to the extent possible. An agreement relative to this matter has been worked out with ERIC/CRESS.

A question is the kind of data which should be kept, and the format in which it should be delivered. The National Diffusion Network (NDN) provides a

successful model for program information. NDN, however, is designed to serve program implementers in addition to higher level decision makers, and the data involved are more detailed and comprehensive than that needed to support the policy level.

The need is to identify instructional programs and packages developed in and for rural areas within the ten states, and to obtain descriptive information on these. As described in the section on operation below, this will be handled by the SDE's.

An ERIC-like abstract will be prepared. It will contain descriptors and/or identifiers relative to the program and to the community. As the different community types are worked out, the descriptive data associated with them will also be added. The abstract will also contain a short narrative description, which includes the program's objectives, its procedures, and backup resources needed. The aim will be to allow a searcher, using boolean logic, to determine quickly what types of instructional programs and packages have been developed for different types of rural settings.

ERIC/CRESS has suggested the possibility of a "Southeastern Program Package." In addition to the abstract described above, more complete information on each program would be obtained. This might be done through a format like that used by AIDS, the dissemination/diffusion unit of the Alabama SDE. A copy of their form is attached in Appendix F. A microfiche including the abstract and the more complete information would be prepared for each program. The set of microfiche, together with any summaries or overviews, would comprise the package. The Council central office would have a program package, one or more packages would be supplied to each state, and other distribution would be made as the Council sees fit.

More detailed information on any individual program, assistance in planning and adapting, and the like would be handled at the local or state level, at each SDE's option, and not by the Council.

C. Other Resource Information

Two other types of resource information are needed. The first concerns the results of research dealing with the rural Southeast. Second is human and institutional resources which can be applied to rural education problems.

Dissemination of research results will be handled through ERIC. The need, therefore, is not to develop a new dissemination system, but to input data to and use the system which exists. ERIC/CRESS receives a very small number of research documents from the Southeast. A concerted effort is needed to locate these documents and feed them into ERIC. Also, as special studies are commissioned by the Council, the results need to be fed to ERIC.

The rural information system will not, as a matter of course, prepare summary reports of research on individual request. Rather, users will conduct these activities, and will normally access data through ERIC. ERIC will put a special Southeast identifier on documents to expedite identification and retrieval. The exception to this general procedure is that, in particular cases (described below), the information system will prepare special "knowledge products."

An easily accessible file of human and institutional resources is needed. Many useful resources are available, but they tend to operate in relative autonomy. Research has shown that rural communities and rural educators in these communities tend to be unaware of the resources available to them.

This part of the system will involve 1) placing information in an appropriate computer file, 2) developing an easy-access system, possibly involving handbooks in some cases, 3) promoting use of the system, and 4) evaluating and refining it.

Many attempts have been made to develop this type of resource file, and most have had limited success. A sensitive issue is deciding what and whom to include and then getting data from all eligible entries. Another difficult task is updating and purging the file. Because of this situation, the recommendation is that the resource file be the last information system component developed.

V. System Operation

The information will be designed with several operational criteria in mind. First will be to make access very easy, for both the information system specialist and the non-specialist. The concept of networking is critical to the whole design. Through networking, communications with the system from SDE level will be in real time (i.e., "interactive" or "on line"). Networking will also provide access to geographically dispersed resources, and allow much duplication to be avoided. To work in this fashion, networking will have to use the latest communications technologies.

Also, the design will not lay another bureaucratic layer on the existing educational system and will avoid adding complexity to the lives of policy makers and those who provide them information support. It will, rather, operate like a transducing connector which joins several distinct entities. As a general rule, complexity is compounded when independent elements of a

system become connected, so care must be taken to aim constantly for frugality and simplicity.

A. The Networking Concept

System Inquiries. One of the fastest growing phenomena in communications technology is networking, that is, the direct exchange of data by computers. A number of networks have developed nationally the last few years, and they are much less expensive to use than telephone lines.

As the authors of this plan understand it, the Council intends to maintain a data base in close geographic proximity to its central office, probably at the Triangle Universities Computer Center (TUCC). Rural education information system data will reside in this data base, along with a variety of other types of data related to various Council priorities. Access to this data base by SDE's and other authorized users will be through one of the networks, such as Tymnet or Telenet.

Data will be fed into the data base by various suppliers, including the organization which develops and maintains the rural education information system. This will be according to specifications and conventions issued by the data base manager (which may be the Council or a subcontractor). A good deal of experience shows this scheme to be operable. The widely-used Dialog system, for example, now houses more than 100 files in its data base, with data input by some 75 different organizations.

This design is illustrated in Figure 2.

To the inquirer, the details of the system will be invisible. All he or she will need to know is an access code for the Council, and the whole interaction, so far as the user is concerned, will be with the Council. The user

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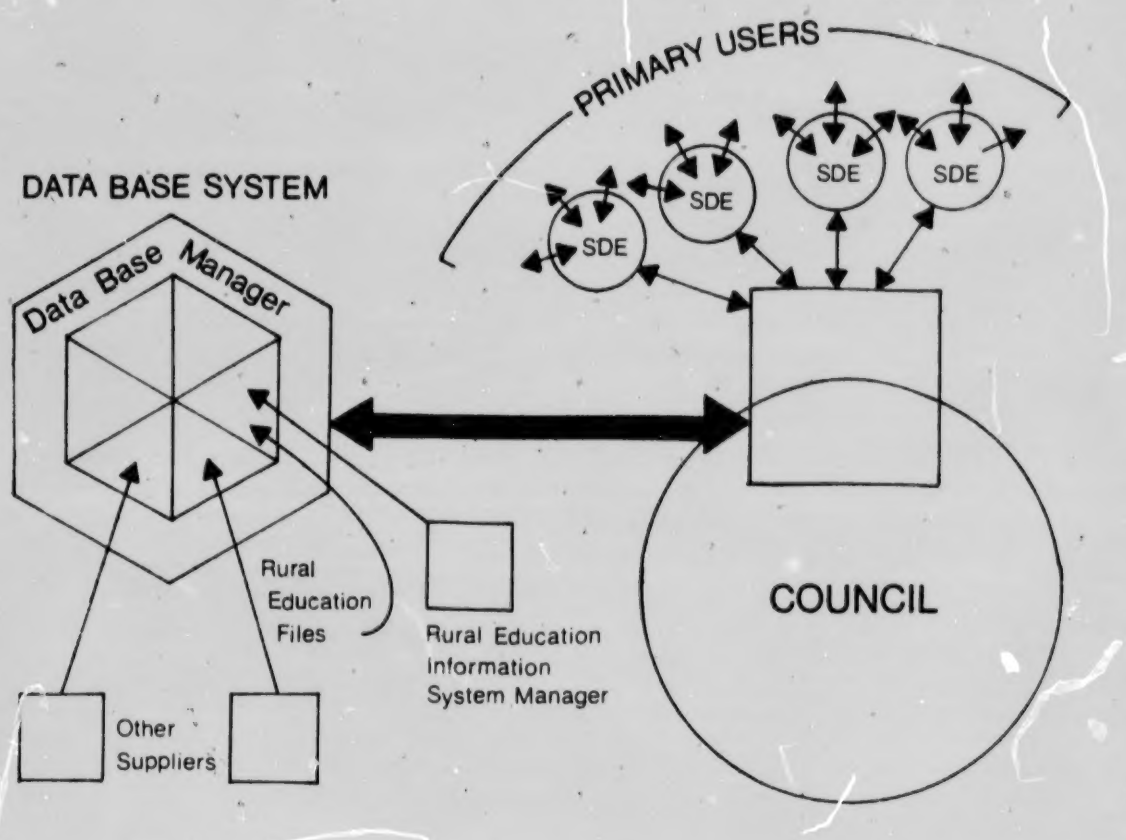

FIGURE 2

must have a computer terminal and a modem. A local (in most cases) telephone number is called, and by responding to a few simple prompts, the user is connected to the Council data base.

This system can operate effectively and inexpensively, if state-of-the-art technology is used. There is obviously a demanding coordination task involved. This will need to be the responsibility of someone on Council staff.

Data Input. Figure 2 presents the output scheme for the system. The other side concerns data input. Where do the Rural Education Information System manager and other suppliers obtain their data?

This, too, will involve networking, some of it via computer and some through other means. The connection with ERIC has already been mentioned and is an important element in the system.

Much raw data can be obtained from existing sources. Table 2 lists the data items selected as first priority in the needs survey on its vertical axis and lists a number of data sources on its horizontal axis. Cells indicate the availability of the item. It should be noted that the SDE column in this table represents only a rough estimate, which was obtained at a meeting of state information system representatives.

The SDE will be the source of last resort. Where there is no other source, data will be obtained from SDE's as unobtrusively as possible. The mechanism for developing this part of the system is explained in more detail below.

Some of the needed data will not be in the form of "raw" individual data items. A good deal of the needed data on community structures, on the place of education in the structures, on rural development and its relationship to education, for example, can come from the Southern Rural Development Center at Mississippi State University and from other relevant organizations. SRDC has indicated its willingness to cooperate in this way.

Computer Conferencing. Some system access will be handled interactively, with the inquirer getting immediate output. In other cases, the inquirer will define a need which cannot be satisfied in real time. The networking capability supports this latter case nicely. The request can be delivered through the system, either in some predetermined logic format or in plain English. Responses can be handled in the same way--on a delayed time basis, of course.

TABLE 2
AVAILABILITY OF SELECTED INFORMATIONAL ITEMS
BY SELECTED DATA BASES

✓ = available at school district level or lower

Information Items	Information Source						
	States	Census	Dialog	NCHS	CBER	SIDH	NCES
I. Student Data							
a. Past academic performance	✓						✓
b. Age	✓	✓			✓	✓	✓
c. Grade level	✓	✓	✓		✓		✓
d. Race	✓	✓		✓	✓	✓	✓
e. Educational attainment of parents	✓	✓			✓	✓	✓
f. Attitudes toward education	✓						✓
g. Attitudes toward self				✓			✓
h. Life goals	✓						✓
i. Work values							✓
II. School System Data							
a. Expenditure per pupil	✓						✓
b. Total budget amount	✓						✓
c. Proportion of funds from local, state, and "soft money" sources	✓						✓
d. Total student enrollment	✓	✓	✓		✓	✓	✓
e. Average daily attendance	✓						✓
f. Student/teacher ratio	✓	✓	✓		✓		✓
g. Vocational education facilities	✓				✓		✓
h. Parent/teacher organization activities	✓						✓

TABLE 2 (continued)

Information Items	Information Source: States	Census	Dialog	NCHS	CBER	SIDH	NCES
II. Community Data							
a. Income level and distribution	✓	✓	✓	✓	✓	✓	✓
b. Population density	✓	✓		✓	✓	✓	✓
c. Mass media Availability	✓	✓	✓		✓	✓	✓
d. Accessibility of services, cultural items and other resources	✓	✓	✓	✓	✓	✓	✓
e. Attitudes toward education	✓						✓
f. Satisfaction with local schools	✓						✓
g. Literacy rate	✓	✓		✓	✓	✓	✓
h. Recreational facilities availability	✓	✓	✓			✓	
i. Rural development activities	✓	✓	✓	✓	✓	✓	✓
j. Political participation and efficacy	✓		✓		✓		

States - 7 states reporting
Census - 4th Count, U.S. Census, 1970
Dialog - Lockheed Information Systems Retrieval Service--one of several commercial services available
NCHS - National Center for Health Statistics
CBER - Center for Business and Economic Research, a State Center for U.S. Census data
SIDH - Southern Index of Data Holdings
NCES - National Center for Education Statistics

B. Data Base System Considerations

The Nature of Data Base Systems. At the core of the network will be a data base system. "Data base system" and "data base" are related but different concepts. A data base can be described as a collection of records of different

types (Chen, 1977, p. 1), which may be accessible to one or numerous users (Davis, 1975, p. 36). A data base may consist of one or more files, each of which is usually designed for a single application.

A data base management system (DBMS), on the other hand, provides a means for sharing data between files and data bases, and for organizing data thus accessed so that it can serve a variety of applications (Romberg, 1977, pp. 50-60; Nolan, 1977, p. 97). Data base systems allow separate files to communicate, in other words, so that individual data items need only be collected one time. This capability for applying data to more than one use, particularly for uses other than that for which they were originally collected, distinguishes data base management systems from traditional file systems or what may be called data management systems.

According to Romberg (1977, p. 57), data base management systems have four additional advantages over more conventional storage and processing techniques:

1. System design reduces the need for scanning, sorting, merging and updating of files.
2. Operations require less set-up time and less external manual management.
3. They are flexible, and this is reflected in the ease with which data base changes are made.
4. Program development is facilitated by automatic performance of many routine functions.

Both numeric and narrative type data can be handled in a single data base (Autrey, 1978, p. 8). Numeric data such as census figures, test scores, etc., in combination with bibliographic notations on race, sex, place of

residence, etc., can greatly enhance understanding and meaning. Elements peculiar to certain locales, for example, can be discriminated from the larger body of data with more finesse and accuracy.

Data base management systems can be classified into three major categories, hierarchial, network, and relational, according to their structures. Each structure requires particular modes of data storage and retrieval, and each performs better under particular circumstances. Relational systems are best where a variety of types of uses is to occur, but the software is quite complex.

One problem in selecting a DBMS is the rate of change in the field. There is constant changing and modifying, with the area growing so fast that innovations are occurring much more rapidly than hardware and other software in the field generally (Datapro, 1980).

A developing trend is to offer different "utility" packages to enhance the DBMS. Examples include inquiry/response systems, report writing, accounting and billing, integrated data dictionaries, special programming tools, and interface systems which provide flexibility in outside communications. Another rapidly growing development is the distributed data base, which allows different files or different components of the system to be housed in different physical locations.

Data base management systems are effective, economical when compared to other ways of handling a variety of problems, becoming easier to use, and gaining popularity and usage at a very rapid rate. They are not inexpensive, however. They require a considerable investment, and they can be the basis

for expensive mistakes. Therefore, great care should be taken in determining what present and future functions the data base management system is to perform, and in selecting the system best suited to these needs.

A surprisingly large number of data base management systems are on the market, and it is much less expensive in most cases to purchase a system than to develop one locally. Datapro's "A Buyer's Guide to Data Base Management Systems" assesses the characteristics of 21 leading systems, and it does not include those systems designed to run exclusively on a particular brand of hardware (1980).

Choosing a Data Base System. In making a decision about the data base management system, these factors need to be considered:

- .A general plan that outlines overall functions and requirements of the system.
- .A thorough definition of information applications, data file contents, retrieval requirements, and security needs.
- .A clear statement of responsibilities, as they apply to data base management system administration, supplier organizations, and user organizations.
- .The characteristics of each candidate data base management system should then be matched against these requirements.
- .An estimate of the total cost of each available system, including the cost differences that different utility packages will make.
- .In addition to cost, important characteristics of the data base management systems are:
  - -Techniques used to organize the elemental structure of the data bases (or files). In most cases, the techniques are hierarchial, network, relational, or a combination thereof.
  - -Whether the system can support simultaneous on-line and batch operations.

-Whether the system allows more than one application program to access a data base concurrently.

-Whether the system will support distributed data bases.

To Distribute or Not to Distribute. An important decision, given the type of general information system being planned by the Council, is whether or not to use distributed data bases. The assumption throughout this paper is that the Council will not go in this direction, but will house the total data base management system in a single physical location. In this case, different suppliers will input data into the system, via tape or other medium, according to system-determined specifications.

The suppliers almost certainly will have content area expertise and interests and will not be content merely to collect data, structure it according to specifications, and input it to the Council's system. Rather, they will want to have a local data base--or perhaps even a data base management system. Financing this, of course, will be their own responsibility to the extent that the costs exceed what is required to meet Council needs.

An alternative to the Council is to use distributed data bases in its data base management system. This means literally that the different data bases (or files) reside in different geographic locations. Use of this arrangement is growing rapidly, as an efficiency measure, and it is certain to increase as communications technology continues to develop. There is an expense involved in maintaining a single file and accessing it from remote locations. The question is, which costs the least in a particular situation? Technology costs have been decreasing so rapidly relative to labor costs, that

the scales have tipped toward distributed data bases in many situations.

C. Making Inquiries to the System

An essential is that the system be truly user oriented. Much lip service is given to user orientation with computerized information systems, but seldom is this state actually achieved. The proof of user orientation is not the developer's feelings or claims, but the extent to which target groups request, receive, and are influenced by outputs. Developers are tempted to blame intended users for system failures--users are not educated properly, they do not use rational decision processes, etc. This plan proceeds from belief that the responsibility for making an information system user oriented lies with the developer and the manager, and not with target users.

This approach puts a premium on good planning and on feedback-guided development, redirection, and refinement. Nothing can substitute for empirical outcomes. Still, some of the necessary conditions for making a system user oriented are known and include 1) outputs that are perceived by the user as relevant and needed, 2) ease of use, 3) timely response, and 4) concise products that communicate clearly and easily.

Design of the system for making inquiries to the rural information system is therefore quite important. It will utilize these features:

.Inquiries will be made interactively. Much material will be retrievable in real time. The user will be able to switch to teleconferencing mode and leave requests in narrative form.

.Interactive inquiry will be through the use of keywords and boolean operators. This approach has been widely tested and has proved quite

successful with non-technical users.

.A system statistics package will be housed on the system. It will include descriptive statistics, multiple regression, and time series components. Users will be able to call up data sets through keywords and will be able to perform limited statistical operations in real time.

.Models are the most important part of the system and will take the longest time to develop. The system will provide:

-A brief explanation of each of the model types.

-Interactive use. The user can indicate a particular analysis unit. If the unit is one of those with descriptive statistics in the system, (a school district, for example), the system will respond with the relevant model type, and on request will call up the model and allow manipulations. If descriptive statistics for the unit are not maintained (for a particular community, for example), the user will be prompted to input them. The system will then operate as above. This use is of course restricted to the types of models the system contains.

-An iterative capability which allows the projected effects of different decisions to be compared.

Graphics are a key to making this type of information system user oriented. The rural information system will rely heavily on graphics. Details are not included in this plan, because, through mutual agreement, the technology is to be included in the plan for the Council's general information system, being developed by the University of North Carolina.

D. Responding to Inquiries

The system will respond in either of three time frames, depending on the nature of the inquiry.

1. To the extent possible, it will respond in real time. This will require, of course, that the user has some minimum understanding and skill in making inquiries. Instead of "crashing" or responding in other irritating ways to user mistakes, the system will offer help in the form of explanations or entry to the teleconferencing mode.

2. Economics will limit what can be maintained for interactive retrieval (at least until later this century, when computer memory becomes a trivial concern). Many types of inquiries which do not allow real-time response can be answered in a short time by someone working within the system. The user will leave a request in narrative form and within a few minutes will receive information as to the type of response that will be made. A "Short-term" product will be deliverable the next day in most cases or at most within a few days.

3. Sometimes the response will require more extensive research, and will involve a "knowledge product." This type of response may take several weeks or even months, and will be costly. (The Council's system of visiting scholars, if implemented, could be utilized.) A decision, involving Council (unless some predetermined decision rule applies), will be made as to whether the request has high enough priority to merit the expenditure. A message will be returned to the requester in a short time indicating what action can be taken, and if a product is to be developed, an estimate of delivery date.

The requester will be notified immediately when the system is incapable of responding to a request, and an explanation will be given.

E. Data Sources

A goal of the system will be to collect as little raw data from original sources as possible. To accommodate this goal, a survey of data sources was

conducted during the planning project. Sources which appear relevant and which were investigated include the U.S. Census Bureau, the National Center for Education Statistics (NCES), ERIC, the National Center for Health Statistics (NCHS), the National Center for Higher Education Management Systems (NCHEMS), the Southern Index of the Southern Growth Policies Board, the Dialog system, and the Center for Business and Economic Research at the University of Alabama (as an example of a general statewide economic and demographic data center).* A brief description of each of these sources is given in Appendix G. In addition, a meeting was held with representatives of SDE information systems, and participants were asked to give a rough estimate of data elements available.

Table 2 (page 31) lists the data elements which have been selected initially for inclusion in the system, and it indicates the best estimate at this time of the source of each element. Data will not come from SDE's if it is available elsewhere. The current best estimate of data item availability from different sources is given in Appendix H.

Arrangements will be made with each source for data transfer. In some cases, a real-time transfer will be possible. In others, magnetic tapes will have to be used. The least desirable and most expensive case by far involves printing out data and reentering.

The assumption is that needed data which pertain to education and which are not available otherwise will be gathered by SDE's. There is no prior agreement on this point, however, and a good deal of joint planning and negotiation will be required. Several pertinent issues were raised at the

*Other possible sources which have not yet been investigated include NEA, the Education Commission of the States, various U.S. Department of Agriculture units, and Educational Research Services (a private company).

meeting with SDE information system representatives and will have to be addressed. The following were considered most pressing:

.Achieving common definition of data elements,

.Costs to the states,

.SDE information system priorities already in place,

.The necessity of real commitment by Chief State School Officers,

.Avoiding duplication in collection efforts,

.Controlling access to data (the privacy issue, etc.),

.Variation in information system capabilities across states,

.Quality control of data,

.Technical compatibility among the different computer systems.

Clearly in evidence at the meeting was the fear that additional work is going to be laid on organizational units which are already over-extended. The issues can be addressed successfully and can be resolved only through cooperative planning which involves the states as equal partners.

Figure 3 depicts data input to the system. It shows that some of the essential data will come from the same organizations, namely SDE's, which comprise the top level of users. One determinant of output characteristics is input characteristics, and thus the SDE's will determine in this technical aspect whether the system they have caused to be developed operates successfully. One would expect the knowledge of this connection to motivate strong performance by SDE's in supplying data, but the catch is that information users (policy makers) are at one organizational level, while data suppliers are at another. This is why both overt commitment by CSSO's and joint planning are essential.

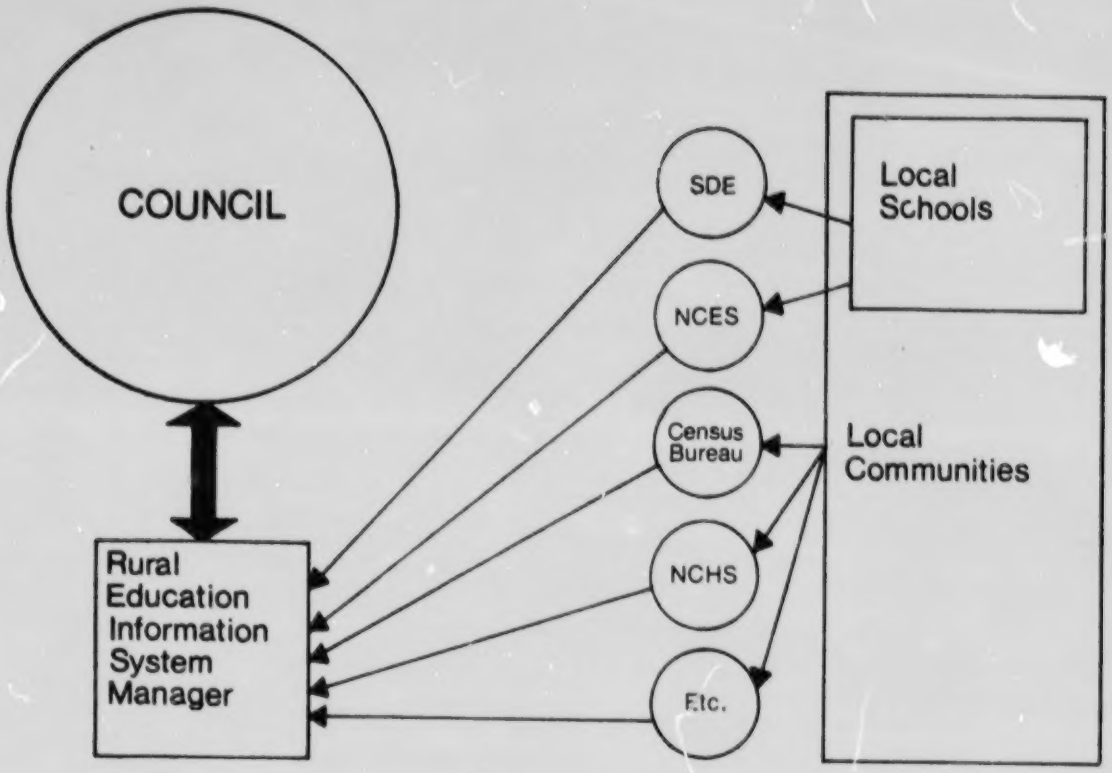

FIGURE 3

VI. System Development

A. The Developmental Approach

The information system described in this paper will be unique. It will be complex and difficult to manage because of many interacting and semi-autonomous parts. It is intended to support policy development, an area where information systems have experienced limited success. The only possible way to produce it successfully is through evolution, or what may be called the developmental approach.

The approach relies heavily on feedback and can be described in steps as follows:

1. Clearly defined operational objectives for the system are set.
2. The system is designed and implemented.
3. Use of the system is monitored carefully to determine the extent to which different objectives are met and to delineate problems which are encountered and their causes.
4. The evaluative feedback is analyzed, with emphasis on determining with as much precision as possible what is working, what is not, and what changes appear to be needed.
5. The cycle is repeated, beginning as far back as step one, if the situation requires.

Development of the rural information system through this approach is depicted in Figure 4.

The concept clearly is dynamic development of an operating system. The system will begin with only a few data items and will be brought on line as early as possible, with the initial activity being access to data files. As it is refined and improved, other data elements and other operational capabilities will be added. Development will proceed at a deliberate pace, with care taken that what is on line works well.

A reasonable expectation is that at least five years will be required to have the system operating as described in this plan. Useful tangible products will have to be delivered within a few months of the time development begins, however, if the effort is to retain credibility.

B. Working Committees and Planning Support

Four working committees will be required to develop the system. These are: 1) a policy task force, 2) a content specialist advisory committee, 3) SDE dissemination representatives, and 4) SDE information system representatives. Operation of each is described briefly below.

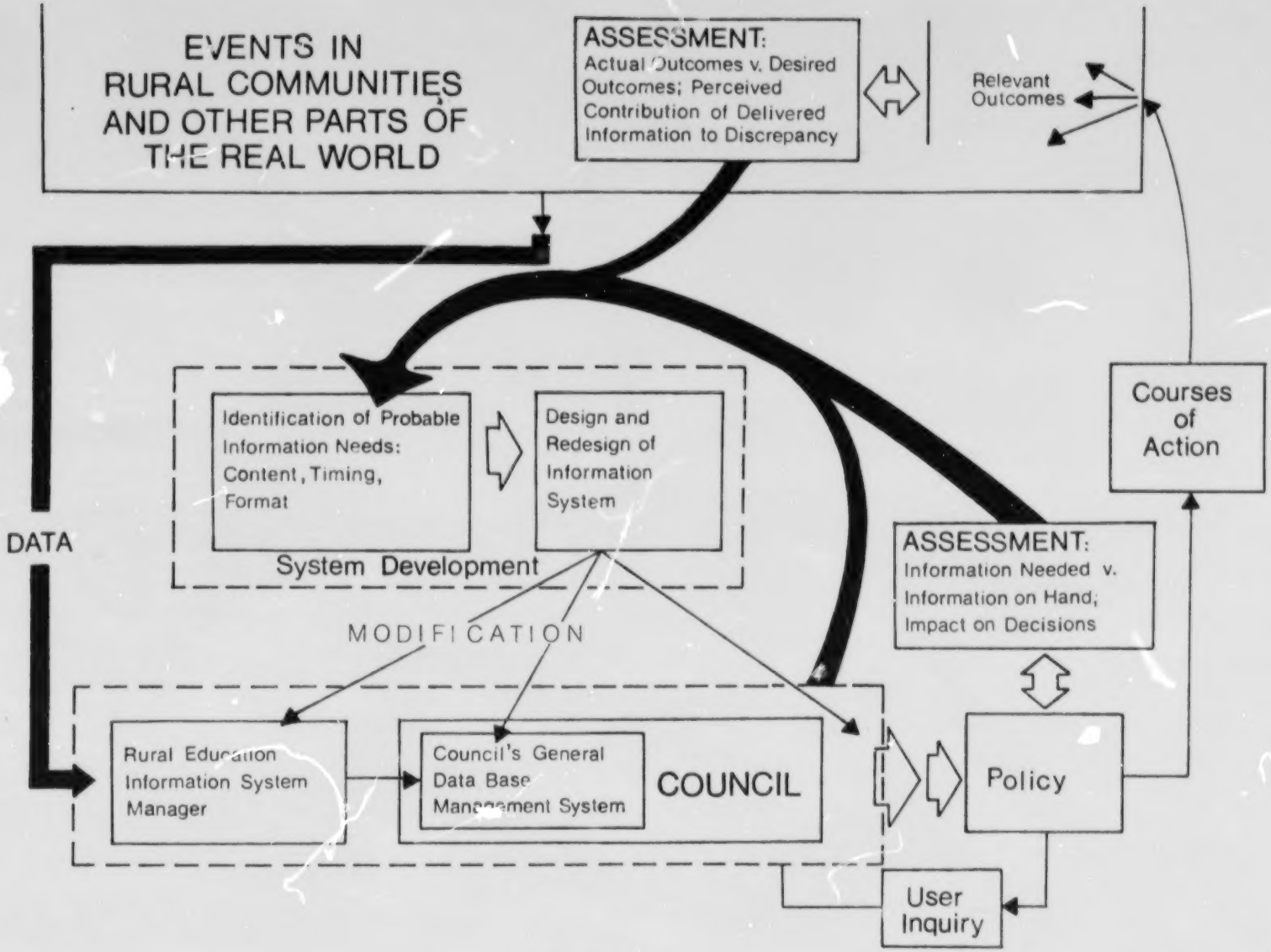
EVENTS IN RURAL COMMUNITIES AND OTHER PARTS OF THE REAL WORLD
ASSESSMENT: Actual Outcomes v. Desired Outcomes; Perceived Contribution of Delivered Information to Discrepancy
Relevant Outcomes
Courses of Action
DATA
Identification of Probable Information Needs: Content, Timing, Format
Design and Redesign of Information System
System Development
MODIFICATION
ASSESSMENT: Information Needed v. Information on Hand; Impact on Decisions
Rural Education Information System Manager
Council's General Data Base Management System
COUNCIL
Policy
User Inquiry

FIGURE 4

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1. The policy task force will consist of users or their immediate representatives. It will include policy level managers at SDE level--and at other system levels if the Council so directs. This group will evaluate and revise system goals, will provide information on policy support needs, and will provide evaluative feedback. It will, in effect, direct the output side of system development. The group will meet shortly after development begins and quarterly thereafter. In the interim, information will be exchanged through teleconferencing.

2. The content specialist advisory committee will include rural sociologists, cooperative extension representatives, rural education specialists, and others who are "knowledge brokers" in the concern area. The group will provide relevant knowledge and theory to system evaluation and planning. The group will meet shortly after development begins and semi-annually thereafter. At least once a year, it will meet jointly with the policy task force.

3. The SDE dissemination representatives will work on two need areas. First is identifying and securing information on exemplary instructional programs and packages developed in rural schools in the states. The group will develop guidelines for this activity and will then be responsible for carrying them out. The second activity, at the discretion of CSSO's, will be linking policy makers below the SDE level in each state to the system. This function will be designed internally within each state. Meetings will be irregular, depending on need. As much communication as possible will be through telecommunications.

4. SDE information system representatives will be concerned with data input to the system from the states. This general matter and related concerns have been discussed above. The group will meet about three months after system development begins and irregularly thereafter, depending on need. As much communication as possible will be through telecommunications.

C. Research Support

Certain aspects of system development will require research support. Some of these needs will emerge as development proceeds and can be handled in various ways, including use of the visiting scholars. Two types of needed research which can be identified are:

.Information needs surveys. The information needs survey conducted during the planning project proved invaluable and demonstrated the usefulness of this activity. It was quite limited in scope, however, and was too small to allow statistically meaningful comparisons among different groups. An expanded survey, with stratified sample and 100 or so respondents in each state, will be conducted in the first half of year one of system development. Depending on outcomes and needs, the survey may be repeated in later years.

.In developing certain aspects of the system, particularly those related to models, case study type research will be appropriate. The need is for intelligent guidance on initial directions to take in particular aspects of system and on overcoming special problems encountered. A small number of case studies in varying situations is needed. Several cooperating institutions will assist. Talks were held during the planning project with officials from East Carolina University and

Mississippi State University, and they indicated willingness to participate. Murray State University in Kentucky has also indicated interest in participating. Others can be added as the need arises.

D. Schedule

A general schedule for the first three project years is given below. The speed with which development can proceed is dependent on funding level. An option is given for some of the activities. They can begin in year one if funding is sufficient; otherwise, the schedule will have to be stretched, and these activities cannot begin until year two. Optional activities are marked with an asterisk (*).

Year One

.Brief the Council's Board of Directors and the Steering Committee. The point has been made strongly in this report that the plan cannot succeed unless the CSSO's are committed to it and support it actively. Without this support, it would be better not to even start. Development should begin with a detailed report of the plan, so that key persons at SDE level will know what to expect and can make necessary arrangements.

.Plan General Information System Specifications. Before much of the technical work on the Rural Educational Information System can begin, details of the Council's general information system must be worked out. Presumably this will involve Council staff, the general information system contractor, and the rural information system contractor. A good deal of joint planning will be necessary. Much of it can be accomplished, perhaps, through teleconferencing. Hopefully, the initial set of specifications can be completed by the end of month three.

.Bring the data system up. As noted, this system will begin with a few items and will be brought along at a deliberate pace. The goal will be to have the system workable and about half of the contents resident by the end of year one. Note that technical communications aspects are constrained by planning for the general information system. Specific steps include:

-Contact sources. Get details on what items are directly available and by what medium.

-Make necessary agreements; secure first data elements.

-Meet with SDE information system (IS) representatives. Work out needed agreements, protocols, and specifications.

-Begin collecting data from SDE's.

-Begin construction of data files, according to data base management system specifications.

-Interface with the Council's general information system.

-Bring initial limited data sets on line by the end of month six.

-Get feedback; begin system modification and fine tuning.

-Add other data elements.

.Hold planning sessions.

-Meeting jointly with the Policy Task Force and the Content Advisory Committee about one month into the project

-Hold other meetings as needed.

.Plan and Begin Implementation of the models system. As explained previously, this is the most crucial aspect of the system. It represents an approach new to most educational policy developers. It must be developed

carefully and cautiously so that components brought online work well and false starts are avoided. Within these cautions, the following steps will occur:

-Develop the initial set of typologies.

-Select types of models for initial development.

-Develop models conceptually, and computerize.

-Test for applicability in different rural locations.

-Revise.

-Test usability and policy developers and revise.*

-Interface with data files.*

-Begin initial online operation.*

.Develop Program Information Subsystem.* This part of the work involves instructional programs and packages developed in rural settings. It is in itself a maior undertaking. Depending on funding level, it may or may not begin in year one. Steps are:

-Meet with SDE dissemination/diffusion representatives. Work out details and agreements.*

-Work out formal arrangements with ERIC/CRESS and other organizations.*

-SDE's implement system at their level and begin collecting program descriptions.*

-About three months into implementation at SDE level, meet with representatives to discuss problems, work out details, and refine the system.*

-Feed material for selected programs to ERIC/CRESS for processing.*

-Develop special files to handle this information, according to data base management system specifications.*

.Conduct information needs survey.

.Identify special research needs.

.Develop online statistics package.*

Year Two

In general, year two will be a continuation of the developmental process. The system will, of course, still be in its infancy at the beginning of the year. During the year, substantial resources will go into modification and improvement, according to feedback received. New features will be added, as the system is capable of including them and maintaining a high level of performance.

.Interaction with working committees. Interaction with the different working committees will still be of great importance. With the SDE IS group, emphasis will almost certainly shift somewhat to planning for the collection of certain new raw data. Attention will be focused in year two on the program information system, and the SDE dissemination/diffusion group will be more actively involved.

.Increase and refine the data system. Much of the data system should be operational by the end of the second year.

.Bring the statistics package online.

.Develop and test the models system. Year one will have been devoted primarily to planning, conceptualizing, and beginning the construction of some of the models. Year two will begin the operational phase of this key system component, and complete approximately 50 percent of the effort. Steps include:

-Bring the initial models online. Begin trial use, with a concerted evaluation/feedback effort.

-Replan as data are received. Identify needed revisions, new models, and field research.

-Plan and implement any special training related to understanding and using the models.

.Implement Program Information Subsystem. The goal will be to have this subsystem fully operational by the end of the second year (if development was begun in year one). Steps will include:

-Plan utilization aspects with the SDE dissemination/diffusion group.

-Interface this subsystem with the model's subsystem. Essentially, this will involve indicating the resources which are available to respond to current and projected needs.

.Work with the Council in identifying needed research on rural education. The Council will have research conducted through its visiting scholars program or otherwise. The rural information system will assist in identifying research needs, and will pick up results for inclusion in appropriate files.

.Plan and begin initial development of the resource file. This file will contain information on individuals and institutions with special expertise applicable to rural education needs. Planning and initial development will begin in year two. Steps will include:

-Determine the content areas to be included.

-Set criteria for inclusion.

-Work with SDE representatives (named by the Council) to plan the steps for identification of resources and securing needed data on each.

-Plan the file to house these data, according to specifications of the data base management system.

-Plan an efficient system for updating and purging the file.

-Conduct the first round of data collection.

Year Three

Developmental work will continue in year three, the details depending on funding levels in the first two years. The models system will be refined and made fully operational. Work on the resource file will continue, and initial operation online should begin about the middle of year three.

E. Budgets

Two budget options have been discussed. If the higher option is selected each year, then the development and products outlined above can be completed in three years. If the lower option is selected, then the rate of development will be slowed by about one tnird, and about 4½ years will be required to get to the same point.

Higher Option. The higher option assumes the following staffing:

-Full time project director

-Half-time computer scientist

-Half-time junior research faculty member

-Three graduate research associates

-Full-time secretary

-Quarter-time clerical support

At current salary levels and travel and other costs, a budget of approximately $160,000 would be required to support this operation.

Lower Option. The lower option would have the staff listed above, minus the half-time junior faculty member, one graduate research assistant, and the quarter-time clerical support. Less travel and fewer support services would

be involved. A budget of approximately $115,000 would be required.

Budget requirements for supporting selected level of effort in later years would, of course, depend on inflation rates.

The project director would be first an expert in rural education and would also need expertise in management cybernetics. It might be feasible to split this FTE into two half-time positions, if the needed expertise cannot be found in a single individual. In this case, the rural education expert would be project director, and the management cybernetics expert would be assistant director.

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APPENDIX A

LITERATURE REVIEW:
The Status and Needs of Rural Education in the Southeast

Introduction

The primary emphasis of this report is to determine what is known about purposive change in relationship to informational planning needs for rural development and rural education. Change may be viewed in two forms: "crescive" and "purposive" (Warren, 1963). Those changes which occur independently and are largely uncontrolled, such as the depletion of natural resources, (i.e., petroleum) and, to an extent, nationalistic values and attitudes are crescive-type changes. Purposive changes, on the other hand, mirror the responses and adaptations of individuals and societies to these developments.

American society has undergone enormous and accelerated change, both crescive and purposive. The societal impact of this rapid development is revealed almost daily when one views the human-altered topography of our landscape and is inescapably prominent in a media which, too, represents both the product and the process of this change.

This report is a selected review of the information about change represented within social science literature and relates change--its antecedents, impacts, and challenges--to community development, educational systems and to rural processes in North America.

Until recently, little federal attention was directed toward rural districts as specific constituencies. Federal policy research reflected this inattentiveness by neglecting or ignoring "rural" as a specific group or category. Consequently, while major national studies might have included samples of rural sites and respondents, the resultant analyses or recommendations were seldom directed with specific reference to the rural perspective.

But the tide has turned. As Moe and Tamblyn (1974, p. 6) have pointed out, "concern with the community as a level of analysis, as a major variable, as an entity to be developed as a strategy or a set of processes in development, led to something akin to a movement."

Some governmentally funded agencies, notably Educational Resource Information Center, the Clearinghouse for Rural Education and Small Schools (ERIC/CRESS) and certain schools of agriculture in state land grant colleges and universities have done an exemplary job of gathering and disseminating information related to rural development and education. Unfortunately, much of the reported research is scattered or does not contain findings and information in a form necessary for making policy decisions at a state, district or community level.

Characterizing Definitions

A discussion of the development of American rural schools, rural development, indeed even the term rural, should be predicated by characterizing definitions.

The term development is somewhat elusive. It implies a goal-oriented position toward a preferred state or set of conditions. The ambiguous element derives from questions concerning definitions of the structure and temporal features of the desired state. Life itself is a developmental process and states may be undesirable and yet adaptive.

> Development may be analyzed in terms of the extent to which it enhances or restrains freedom in its specific environmental, dispositional, and developmental aspects... In a positive sense, it is the capacity and willingness to risk and change. In a negative sense, it is the absence of excessive fear and reliance on inappropriate defense mechanisms... (Moe, et al., 1974, p. 58)

Community development, like individual development, is a self-directed, self-renewing expression of a group's potential over time. This is a deceptively simple explanation because desired objectives or states and methods of achieving these states are incredibly complicated.

Part of the difficulty is associated with the way in which we view progress and development. Improvements in performance may not keep pace with rising societal expectations. As Banfield (1974, p. 23) puts it, with regard to urban development, "...although things have been getting better absolutely, they have been getting worse relative to what we think they should be." (In other words, we have to run as fast as we can just to stay in place!)

A precise definition of rural is difficult, if not impossible to frame. For example, the term rural may be said to imply a vocation or style of life such as farming; or it may imply the number of persons living within a measured area of land. Dawson (1954) gave a traditional, two-fold definition of rural:

> First, it is relatively low density of population. Rural people live in smaller groups and farther apart than city people. The second characteristic is that rural people are primarily engaged in processing resources of immediate surroundings or in performing services for people so engaged. This concept includes open country, farm villages and communities or people engaged in mining, lumbering, fishing, and related processing activities, and also the people engaged in personal, professional, and business services in such communities.

Many urban sociologists view ruralness as consisting of two bipolar continuums. Each continuum represents a very rural to very urban dimension. One continuum ranges from quasi-democratic to ultra-democratic. Rural populations are more likely to be quasi-democratic than are urban populations. The other continuum, precapitalistic - advanced capitalistic, describes economic systems which operate in a particular area. Rural populations are more likely to be precapitalistic, that is, engaging more in subsistence farming or bartering, than in coinage exchange for labor.

People who live in less densely populated areas are classified by numerous terms which often overlap. This results in confusion when we attempt to discuss these groups. Moe, et al. (1974) provide a useful contemporary definition which dicotomizes the population into metropolitan and non-metropolitan groups. Places outside of counties containing a city of 50,000 or more inhabitants during the 1970 Census are termed non-metropolitan.

Tweeten (1980) alters this definition somewhat and describes rural areas as being "micropolitan." These areas would be comprised of non-metropolitan areas and of small towns and open country within metropolitan areas.

Bass and Berman (1979) provide a listing of four definitions used to classify rural school districts.

1. The Office of Management and Budget (OMB) classifies rural school districts as being those which lie outside of a county with a city of at least 50,000 population plus surrounding counties that are integrated into the economic life of that city. Large cities (50,000 or more inhabitants) and their suburbs would be classified as metropolitan. The remainder of the country would be nonmetropolitan.
2. "Minimally urbanized" areas refer only to those nonmetropolitan counties which do not have a city with 10,000 or more inhabitants. "Under this definition, all districts in such minimally urbanized counties are classified as rural. If on the other hand, a nonmetropolitan county has a city of at least 10,000, all of the school districts in that county are deemed nonrural." (Parks and Berman, 1979, p. 6)

3. As defined by the U. S. Department of Agriculture for classification by degrees of urban influence, concentration, and proximity, urban means residents living in places of more than 2500 inhabitants. The Beale Scale, after its developer, demographer Calvin Beale, is a nonmetropolitan classification system of the U.S.D.A.

   (1) Urbanized, adjacent: counties contiguous to SMSA's and having 20,000 or more urban residents, 1970.

   (2) Urbanized, not adjacent: counties not contiguous to SMSA's and having 20,000 or more urban residents.

   (3) Less urbanized, adjacent: counties contiguous to SMSA's and having 2,500 to 19,000 urban residents.

   (4) Less urbanized, not adjacent: counties not contiguous to SMSA's and having 2,500 to 19,000 urban residents.

   (5) Rural adjacent: counties contiguous to SMSA's and having fewer than 2,500 urban residents.

   (6) Rural, not adjacent: counties not contiguous to SMSA's and having fewer than 2,500 urban residents.

4. School districts within nonmetropolitan counties, i.e., persons residing in communities of fewer than 2,500 residents. "Under this definition we consider as rural only those metropolitan school districts with 100 percent rural population . . . we would consider a district rural only if all of its students were drawn from communities no larger than 2,500." (Parks and Berman, 1979, p. 7).

For the purposes of this discussion metropolitan/urban and rural/micropolitan/non-metropolitan will be used interchangeably to denote the same concept.

Rural development has been defined as the improvement of the "level and distribution of opportunities among rural people and the processes and

procedures for achieving this objective." (Moe, et al., 1974, p. 58). Rural development and rural education are difficult to distinguish from one another because in American society development and education are interdependent functions. Rural development may be thought as as a set or general concept in which planning, organizing, and evaluating educational opportunity is an interacting subset. To assess each concept independently would be something akin to the problem Von Heisenberg had in attempting to measure motion and mass simultaneously. Uncertainty arises because each element has an effect on the other. One cannot measure one element independently.

Historical Perspective

American society has long placed a high premium on the importance of education. In his 1779 discussion of the relationship between education and liberty, Thomas Jefferson wrote:

> Even under the best forms (of government) those entrusted with power have, in time, and by slow operations, perverted into tyranny; and it is believed that the most effectual means of preventing this would be, to illuminate, as far as practicable, the minds of the people at large... whence it becomes expedient for promotion of the publick happiness that those persons, whom nature hath endowed with genius and virtue, should be rendered by liberal education worthy to receive, and able to guard the scared deposit of the rights and liberties of their fellow citizens... (Curti, 1974, p. 1)

Until the 1830s American schools continued to bear characteristics of the colonial era. However:

> ...the schools of two hundred years after the founding of Jamestown and Massachusetts Bay reflected the class prejudices and religious interests of colonial society. This was true notwithstanding the fact that from region to region and even from neighborhood to neighborhood there were great differences in the character of schooling provided. (Curti, 1974, p. 3)

Horace Mann, in the mid 1800s, influenced the "common" school, an ideal that envisioned schooling as being a common provision for all people. "It would be open to all, provided by the state and the local community as a part of the birthright of every child." (Cremin, 1964, p. 4) These ideas paved the way for progressivism in American education. Common schools were to be implemented by providing an education which rested in the political control of the people. As William T. Harris phrased it, the school was the "great instrumentality to lift all classes of people into a participation in civilized life." Schooling was seen as "a preliminary for the larger adult life, an education continuing through adulthood...". (Cremin, 1964, p. 16, 18)

In 1852, a focus on vocationalism began with the seminal work of the Massachusetts State Agricultural Board. These efforts were taken up by thirteen other states during the 1860s and 1870s. The agricultural colleges founded under the Morrill Act of 1862 stand as a monument to these activities. An America with strong rural-based, agrarian ideals, represented by the National Grange, which in 1876 created a standing committee, helped secure the Hatch Act in 1887. This Act provided rural areas with federally assisted agricultural experiment stations designed to assist farmers and rural inhabitants in acquiring useful and practical information on subjects connected with agriculture.

The Second Morrill Act, in 1890, provided further federal support and created Agricultural and Mechanical (A. & M.) Colleges.

In the 1890s the National Education Association Committee of Twelve Rural Schools advocated . . .

> consolidation of schools, the transportation of pupils, expert supervision by county superintendents, taking the schools out of politics and [having]

> professionally trained teachers. The rural school would teach country children sound values and vocational skills; the result was to be a standardized, modernized community in which leadership came from the professions. (Gjelten and Nachtigal, 1979)

Perhaps the most dramatic impact on rural communities and their schools occurred as a result of world industrialism. The horizontal assembly-line manufacturing process, conventionally attributed to Henry Ford's genius, required large numbers of laborers both for the production and for the procurement of the manufactured product. Social Darwinism, the European migration, a second major economic depression and two major world military conflicts occurred during the first half of the twentieth century. Each of these events was linked to the capitalistic industrial development which provided improved economic conditions for workers and encouraged their migration from the farms to the expanding urban setting.

Agrarian ideals and values of the late nineteenth century were being overshadowed, if not replaced, by unreined capitalism. Prominent American authors documented this shift in emphasis. Sinclair Lewis' Babbitt is a sterling example of the times, illustrating how human values were intermeshed with the spirit of industrialism and free enterprise.

"Get an education" became the 19th century replacement for Horace Greely's "Go west, young man...". Getting an education for rural inhabitants was a prelude to leaving the farm and rural area. (Bowles and Gintis, 1974; Hobbs, 1979)

Crites (1974) cited 1910 as being a turning point for the vocational education movement. Already large numbers of farm youth were leaving the hinterlands in search of economic opportunity in industrialized, urban areas. The American Federation of Labor merged with the National Association of

Manufacturers and began lobbying for trade and industrial education in the schools. The National Education Association supported trade and industrial education as a means of training a populous for the developing industries within cities.

In spite of this pressure to provide a work-force for industry, the Smith-Lever Act of 1914 established a national system of extension work in agriculture. Hyde Bailey and Seaman Knapp of Texas--along with other prophetic voices concerned about the loss of talented youth in rural areas--cried out, warning that a reduction in rural education would cause rural hardships and that curricula increasingly had become isolated from the communities, bearing little relation to actual rural life. Some communities and states were influenced by these writers and initiated efforts to respond. For example, state-supported agricultural high schools were established in Alabama, Georgia, Wisconsin and California during this period.

Knapp proposed that scientific farming might resolve rural economic problems. Mable Carney, in her 1912 work Country Life and the Country Schools. advocated special teacher training for reviving rural areas. Many of her ideas have a familiar ring: Rural school facilities should be improved, teachers should be trained as community leaders, schools should be a center for community life and should provide a practical, yet, well-rounded curriculum to include such courses as "elementary rural sociology." (Cremin, 1964).

Despite numerous attempts to regard urban industrialism as a prime factor in American society, the United States was a predominantly rural nation until the 1920s. Forty-four percent of the population was still considered rural until the advent of World War II. The post depression economic recovery which followed the Second World War required even larger concentrations

of labor. Consequently, a massive population migration from the remote regions, farms, and small towns began to accelerate. Better jobs and expectations for improved economic conditions were important reasons for these relocations (Ross and Green, 1979).

Rural migration, notably from the South, resulted in social problems for both urban and rural areas. These problems were especially evident in the relative neglect of rural public schools.

Education in rural areas became the "poor country cousin of the public school system." By accepted standards it has been backward, less well-financed, poorly staffed, offered fewer educational opportunities and turned out students less well equipped to cope with an industrialized urban society. (Gjelten & Nachtigal, 1979). Prior to this time, organizations such as the Cooperative Extension Service were successful in disseminating agricultural research information to the literate farmers. However, as Hobbs (1979) points out, farmers who were illiterate--and there were increasingly large numbers of them--failed to gain from these procedures. "The importance of this factor may be underscored by observing the relative ineffectiveness in the Extension Service with less well educated sectors of the rural population in this country..." (Hobbs, 1979, p. 3). The increased use of mechanical and technological advances in scientific farming complicated the situation even more. As farms became mechanized, they increased in size, becoming agribusinesses. This mechanization resulted in a reduced demand for unskilled and semiskilled farm labor.

In 1944 the White House Conference on Rural Education recommended that rural children should be included in the public provision of an effective elementary and secondary education. (Edington, 1976). Long recognized as

being an integral factor in the stabilization and development of nonmetropolitan communities, the rural schools began to receive more attention following the Second World War.

Rural schools, undergoing dramatic changes, became "urbanized." This according to Sher and Rosenfeld (1979), meant "consolidated." Consolidation of local school districts into larger administrative units resulted in a substantial reduction in the number of operating public, local education agencies through the decades of the 1950s and 1960s. (Mack, 1979). This approach did not, according to Hobbs (1979, p. 3), do much to remedy the problem.

> While the changes in form and substance of rural education may not have caused the more accelerated rate of rural to urban migration in the 1950's and early 1960's it certainly didn't contribute much to slowing it down...
> Consolidated rural schools were probably not intentionally designed to offer 'migrant preparation' but intentional or not the experience of schooling was, and is, more apropos to employment in a mass urban labor market than to entrepreneurship in a rural locality.

Sher and Thomkins (1976) suggested that small schools were not only necessary but were a desirable alternative to large, rigid urban schools. They questioned the alleged economic justifications for consolidation, suggesting that it failed to compensate for some of the advantages offered by small schools.

Stutz, Hollingshead, and Fletcher (1972) supported these conclusions stating:

> ...the quality of human relationships seems to be reached at a much smaller organizational size than the point of diminishing returns in terms of economic opportunity. (p. 2)

However, as Mack (1979) reports, consolidation of school districts was widely adopted. In 1948 there were 106,000 districts but in 1978 there were only 15,913. This consolidation was implemented in several ways: Legislative mandate, locally initiated mandates, district merger, and through a combination of these procedures.

Reliance on school reorganization or consolidation began to be questioned. "It was becoming obvious that programs for small schools were still significantly behind those for urban and suburban schools..." (Edington, 1976, p. 4; Foster and Sheffiel[illegible] 1974). Numerous alternatives to consolidation were implemented as it became evident that some schools would simply have to remain small because of population sparsity and terrain features.

Mack (1979) cited three other structural approaches which gained widespread use in the 1960s and 1970s: (1) The provision of specialized services from a decentralized state education agency; (2) the formation of special district education service agencies and; (3) the development of educational cooperatives. Numerous projects were funded and implemented. Examples of these included: the Rural School Improvement Program at Berea College in Kentucky, the Alaska Rural School Project, the Rocky Mountain Area Project for Small High Schools in Colorado, the Oregon Small Schools Project, the Texas Small Schools Program, the Upper-midwest Small Schools Program, and the Rural Education Improvement Program of the Southern Association of Colleges and Schools.

Exemplary or model school systems for rural communities were established. These projects included innovations such as curricula revision, computer based modular scheduling, telephone teaching, non-graded organization, bilingual and career exploration activities, (Gjelten, et al. 1979). Because

of the importance of a community based decision making process and the impact of the urban migration patterns, the Leadership Development Program was created. This program was intended to identify and develop future leaders from within economically disadvantaged nonmetropolitan areas.

Rural development as a political and policy term was popularized in the early 1970s. The Rural Development Act of 1972 attempted to assist individuals and small groups achieve and maintain developing communities through the provision of educational information and services in health care and nutrition areas, manpower development and natural resource usage. (Moe, et al., 1974).

Prior to this time rural development was, according to Hobbs (1979, p. 4), "...in effect a policy of default to...

> increase percapita income in rural areas by reducing the number dividing up the pie. Among the many consequences of this emphasis was the significant depletion of capital in rural areas and the creation of two glaringly conspicious disadvantaged populations -- the people left behind in the rural areas and the inner city!...
>
> The rural school should be the focus of rural development objectives and investment to redress support inequities existing between rural and urban schools.

This role is not a novel one as the traditional one room school provided a similar rural development function during earlier times in American history.

It became evident that "education in itself, whether conventional or otherwise could achieve little change by itself" (Wood, 1974). Wood's conclusions were similar to those offered by Stutz, et al., (1972):

> Schools have not been able to compensate for cultural disadvantage, and this casts doubt on their ability to serve as agents for social change. (p. 6)

Early strategies designed to encourage and improve rural education included the efforts of the Urban/Rural Education Professional Development Act and the Rural Futures Development Program (RFD) of the Northwest Regional

Educational Laboratory. According to Gjelten (1979), each of these effects had its limitations over time. While some rural areas seemed to be developing well, other areas were deteriorating.

The Urban/Rural program attempted to allow greater local control by having communities control funds. Gjelten reported that, "despite the good intentions by Urban/Rural to let local communities call the shots, inflexible time lines and bureaucratic expections . . . [resulted in the] . . . loss of local ownership," thereby negating the noble goals of the project.

The Rural Futures Development Program of the Northwest Lab formed small community groups which were trained in group process, assessment of needs, agenda building and persuasion techniques. Gjelten's comments were less than encouraging:

> With the demise of project money the number of PF's [process facilitators] has been reduced and the neutrality central to that position is eroding; the remaining PF is now paid by the district and serves more and more the interests of the administration.

Moe, et al. (1974, p. 7) noted that "as social and economic life became reorganized, multi-county districts emerged as units of planning and development." These authors identified seven developmental levels, observing that while they were prominant in urban areas they failed to produce benefits for rural areas. These levels were:

1. Individual and self development-self renewal
2. Organization and instruction development-organization renewal
3. Community development
4. Multi-county sub-state planning and development districts
5. The state
6. Rural and urban development-multi-State development
7. National development

Rural development and rural education became linked as researchers and policy makers became increasingly aware of the impact of conglomerate, multi-county districts upon these nonmetropolitan areas. As Moe and Tamblin (1974, p. 1) explained:

> Rural schools are an integral part of rural communities and rural society and are effected by the forces at work within and upon rural society. Massive forces of industrialization, urbanization, and bureaucratization as they have altered American society generally have changed rural society, rural communities, and rural schools.

Farms have increasingly become mechanized, and, consequently, farm employment has been reduced by 50 percent since 1950. In other areas of rural employment such as forestry, mining, and local industry the number of job opportunities is also being reduced as services or products are no longer needed. (Gilliland, 1971; Yarger and Yarger, 1979). This situation prompted certain rural social science researchers to request assistance. Mack (1979) called for the federal government to demonstrate its concern by "seeing that provisions are made for rural schools to share equitably in federally mandated and supported programs to improve education." Some types of federal legislation, such as P.L. 94-142, concerning equal education for the handicapped, were not possible in sparsely populated areas as the legislation did not permit collaboration through some cooperative service arrangements.

Tweeten (1979) reported that the declining attention of social scientists to rural development and education was "coincidental with diminishing public support of rural development...". One reason for this inattentiveness was differential employment rates. This was particularly evident in the rural South. The "food crisis" of 1973-1976, followed by the farm protest movement of 1977-1979, diverted the attention of rural legislators toward resolving

farm and food problems. This resulted in a general neglect of rural education by policy and lawmakers who had heretofore supported rural development. Most importantly, Beale (1975, 1976, 1977) reported a rather startling finding: The dominant migration patterns of rural-to-urban relocation which had been prominent for many decades had begun to shift, even to reverse.

Current Perspectives: Migration and the Variability of Reverse Nonmetropolitan America

Trends in migration and education are interrelated. In the rural areas, this outmigration played an important role in lowering the educational levels of rural populations between the 1940s and 1970s.

The selective loss of its better educated young people left rural areas with a population whose educational attainment was generally lower. This resulted in dramatically altered life styles and in the inability to respond to evolving technological changes. This condition requires contemporary education. (Ross, et al., 1979)

Numerous studies (Tweeten 1979, Beal 1975, 1976, 1977, and Ross, et al. 1979) give current perspectives of migration trends on rural development:

> .Farm employment and population appear to show signs of stabilizing. The annual net migration from farms averaged 5.3% from 1950 to 1960 and 5.6% from 1960 to 1970. Net migration was only 2.1% from 1970 to 1975.
>
> .The farming industry provides an economic base which supports many rural communities; yet farmers receive more net income from off-farm than from farm sources.
>
> .Fewer than 20% of the nonmetropolitan workforce actually earn livelihoods either directly or indirectly from the farming industry.
>
> .As farm (and farm-related)labor has leveled off, the economic destiny of rural areas depends more on the development of alternate industries.

.Between 1960 and 1970 three million migrants left rural areas for metropolitan areas.

.In the first half of the 1970s nonmetropolitan population increased 6.6% while metropolitan growth increased 4.1%.

.Net migration into rural areas between 1970-1975 was 1.8 million.

.Non-metropolitan populations constitute almost a third of the national U. S. population.

However, as Tweeten (1979) points out, much of the rural growth occurred in nonmetropolitan areas near large urban centers. This growth trend does not necessarily indicate renewed growth in all small towns as these places are expected to continue to experience outmigration.

Paradoxically, population growth per se does not necessarily bring about a positive state of affairs. In some growth areas, poverty and unemployment remain as problems for the original residents. Income levels in rural areas are lower than in urban areas. Median family income in the city is $14,909; in rural areas it is $11,600. While the reduced cost of living in some rural areas partially offsets income differentials, much inequity in salaries continues to exist.

Incoming migrants to rural areas differ not only from region to region but also from many of their new neighbors within the same region. Voth, Danforth, Fitzgerald and Jackson (1979) reported that incoming migrants to Arkansas differed as greatly on social and demographic variables as on reasons given for relocation. Migrants often differ in their attitudes toward education and many times these attitudes are different from those of the original population. In Maine, for example, immigrants were active in promoting community education. In locations such as those made up of predominantly retired persons--migrants having different needs--school issues and funding were deemphasized. (Ross, et al., 1979).

Sociological changes resulting from increased community size occur at differing rates and elicit various types of community adjustments. Sudden overcrowding creates demands which stress the capacities of social services. Health care, mental health, social welfare agencies and public education are seriously affected by rapid, unplanned growth. Such agencies depend upon funding from the tax structure in order to provide community services. Long-term overcrowding within educational facilities may limit seriously the quality of instruction as well as the attainment levels of students.

Obviously, there is no simple way to predetermine the impact of migration on the widely diversified, yet ever changing rural scene, nor do we know how long this trend will continue. Regardless of the length of the trend, the immediate impact of rural development has sociological and educational consequences:

> Rural schools do not exist in a vacuum. They are an integral part of rural communities and rural society and are affected by the forces at work within and upon rural society. (Moe and Tamblyn, 1974, p. 1)

What Is Known About Some Rural Areas

What we know about rural schools:

We know that a variety of definitions exists for both rural areas and small schools. Some professional educators consider a small school as being one which includes a population of between 800 and 1000 students in high school and between 300 and 400 students in elementary schools. Other organizations consider high schools of fewer than 300 students "small." (Edington, 1976).

We know that there are inadequate linkages between the educational superstructure and the small school. Rural school administrators often lose touch with their larger social framework and schools become insulated from the

community. Failure to solicit and encourage adequate, active informational exchange processes--especially concerning decision-making and planning--results in a host of problems for education in general. A consequence of the failure to attend to the pulse of the community may result in a school program which is more concerned with maintaining the status quo or its ironic antithesis--unexplained, "newfangled ideas", than in providing viable, community-serving education.

When concerned people feel left out of decisions a variety of results can occur. One of these results is expressed as apathy. This is a passive mode of behavior which develops into a self-defeating cycle:

> Community members lack skills to make school decisions;
> because they don't make school decisions,
> because they are included in no school decisions.
>
> Believing that it is beyond their control, community members leave decisions to "educational experts,"
> because they make school decisions
> because they are experts.
>
> Experts make school decisions
> because community members don't make school decisions...a capo sin fine.

Over time, community apathy erupts, spewing "unfounded anger" upon confused school administrators. This confounds the decision making process and often results in irrational decisions. This may be one factor relating to another thing we know about rural schools -- there are rather high turn-over rates among rural school superintendents. Incomplete communication linkages between local schools and the regional, state and national agencies from whom certification requirements, administrative and fiscal guidelines and resources emanate further extend and complicate the role/function issue.

We know that there is as much variance between rural schools as there is between rural and non-rural schools. "...our views of rural America after two years of visiting rural schools...are that...life is different in Fort Gay and Holmes County than it is in St. Louis or Denver. Further, life in Fort Gay is also significantly different from that in Holmes County which is different from Devil's Lake, North Dakota." (Gjelten, 1979, p. 25).

We know that recommendations for school policy and staff development are deceptively simple. "A simplistic approach of listing problems in rural education would probably result in recommendations that are infeasible and destined to create unrealistic expectations that lead to unfulfilled promises." (Yarger and Yarger, 1979). If standards and expectations rise faster than performance, the problems get relatively worse as they get absolutely better. There is a danger that we may mistake failure to progress at all as failure per se, and, in panic, rush into ill-considered measures that may serve to make matters worse (Banfield, 1974).

We know that marked differences exist between rural and urban school funding appropriations. Nonmetropolitan residents are more likely than metropolitan residents to attend public schools which spend less for instruction. Tweeten (1979) reported that federal outlays per capita in 1976 were $300 higher in metro counties than in nonmetro counties:

> Proportionately fewer dollars are spent for the education of students in rural schools than for their urban and suburban counterparts. Even in terms of purchasing power, most rural schools spend less. Only in homogeneously rural states -- those with evenly distributed resources and no major metroplitan centers -- is there anything approaching equity in spending power. (Mack, 1979, p. 2)

Recent efforts by Bass and Berman (1979) indicate that issues concerning equalization of federal allocations to rural schools are complicated

but that the "few reported analyses of the allocation of funds from federal programs do not answer. . . [the question of "fair share" issues] (p. 1).

Federally funded programs affecting rural schools should review state plans carefully to insure that all districts receive their fair share of services. Part of the problem is associated with funding formulas which neglect population sparsity factors, thus reducing the budgets of developing communities and schools. (Moe and Tamblyn, 1974)

Tax formulae constitute a portion of the problem. Tweeten (1979, p. 40) commented on the usage of property taxes:

> On the average, common public schools receive about half of their funding from local taxes, two-fifths from state sources, and one-tenth from federal sources. Discontent with school financing focuses primarily on the local property tax, which provides four-fifths of locally financed school revenues. Compared to poor districts, wealthy districts provide more revenue per student with less tax effort as measured by tax rates. Because their real property values are large relative to income, farmers are hit especially hard by property taxes. Property taxes have also been criticized for being unresponsive to needs by failing to rise as fast as income for taxing regressively.

We know that there have been a variety of educational planning procedures. Policy and planning decision makers at the state and local levels have used four basic approaches to alter traditional delivery systems for the improvement of rural education:

(1) Reorganization of local school districts into larger administrative units.

(2) Provision of specialized services through decentralization of the state education agency.

(3) The formation of educational cooperatives.

(4) The formation of special district education service agencies. (Mack, 1979).

We know that rural educational services are limited by their size. Many rural communities have limited access to desired educational services compared to those available in cities and suburbs. High quality vocational education is scarce in some rural areas of the country. Most small communities are unable to offer their students a range of options which broaden and increase life choices. (Mack, 1979).

Gjelten (1979) noted that a combination of several general factors is necessary for rural education reform: A sufficiently preceived need, an outside spark and awareness of what could occur, and individuals with a commitment to the community. School consolidation often emerges as the preeminant means of achieving school reform. However, consolidation of schools is controversial because of five basic issues:

> At a more general level there is little agreement on (a) whether bigger is really better, or whether there are advantages to smallness; (b) to what extent equal educational opportunity means the same educational opportunity; (c) the relative advantages and disadvantages of local control; (d) the value of maintaining the integrity of communities vs. the arguments for efficiency and effectiveness; (e) the local communities vs. the good of society. (Gjelten, 1979, p. 29).

Special services, such as special education often take place in unique organizational environments in rural areas because of school size limitations. Moe, et al. (1979) reported on the variations in types of organizational units:

> (1) State established special districts: These tend to provide the greatest range of services and to employ large staffs.
>
> (2) Decentralized state education agencies. These provide no direct services to children.
>
> (3) Collaboratives tend to use a combination of shared local programs and directly sponsored services.

We know characteristics about some rural students. Rural students generally enroll in school later, complete fewer years of school, score lower on nationally normed tests and are more likely to be classified as functionally illiterate than nonrural students. This is especially evident among rural ethnic minority groups (Fratoe, 1978). The median years of school completed by white males 25 years of age and older was 12.6 for metro and 12.2 for nonmetro nonfarm, and 11.4 for nonmetro farm residents. For blacks the same age, the medians were 11.6, 8.1, and 5.9, respectively.

Kuvlesky (1970) reported that while Southern rural youth have very high job and education aspirations, these aspirations are generally lower than those of urban youth. The vast majority of these rural students want a college level education or at least formal vocational training in a junior college after high school. Few of these young people desire or expect to farm. This is actually quite realistic since only 10 percent of the rural youth would be able to find farm employment. (Hernandez, 1969).

We know that there is a complex relationship between rural development and rural education.

> Discrepancies in schooling attainment for the most part disappear after adjustments are made for (1) migration patterns which moved many young and educated rural residents to metropolitan areas prior to 1970, and (2) lower initial socioeconomic status of students and their parents in rural areas. After adjustments for these factors, it is not possible to say that rural school children on the average attend inferior schools or rank low in schooling attainment. To be sure, economies of scale preclude providing in rural schools the wide ranging programs and curriculum found in metropolitan schools. (Tweeten, 1979, p. 44).

Schooling does not solve social problems apart from rural development. These problems are too complex for simplistic solutions such as "more education" alone. Eliminating earning inequities among minority groups in low

income rural areas demands an end to racial and gender job discrimination, and requires job creation in some depressed areas, as well as improved methods for funding rural schools.

Holland (1963) demonstrated that taxes and benefits from public elementary and secondary schooling have a general effect toward income redistribution. Tweeten (1979, p. 36) stated there is not a clear relationship between education and income for some groups, suggesting that increasing rural economic opportunities (i.e., rural development) was not clearly linked with education.

> Common schools have promoted income equality as an increasing proportion of youth from low income families have finished high school. The amount redistriubted are not large relative to incomes, hence the results do not conflict sharply with conclusions reported earlier that equalizing educational attainment would not markedly reduce variance in the distribution of income.

What We Know About Rural Development

We know that large numbers of people are classified as being nonmetroplitan residents. Using the 1970 census, there were 53.8 million people living in nonmetropolitan areas. This represents one out of every four Americans. Almost half of this group (46%) were younger than 25 years of age, and 10.5 million of these youth lived in the South. (Jimenez, 1974).

We know that rural areas have large numbers of ethnic group members which are widely distributed both within and between regions. Over two million black Americans reside in the South. Ninety-six percent of all rural black youth live in the 16 Southern states. (Jimenez, 1974)

Rural youth represent a wide range of ethnic and cultural groups. Edington (1970) observed that these young people may find it difficult to adapt to the educational environment because these environments tend to follow the values of the dominant culture. He concludes that the two primary conditions "vital to any consideration" of these disadvantaged rural youth are isolation and poverty. Rural education cannot be separated from an environmental condition in which basic needs are unmet.

We know that the quality of life is different in rural and in urban areas. Humphries (1980) found that rural counties in a Southern state demonstrated that developmental progress was occurring, but that this was at a slower rate than for urban counties. Many of the urban-rural inequities were expanding. An alarming "quality of life" indicator was the report of increases of suicide rates in rural areas. In 1950, suicide rates in the nonmetropolitan counties studied were lower than in urban counties. By 1970, however, this indicator of social problems shifted so that rural counties had higher suicide rates than did urban areas.

In 1970, rural counties had the highest percentage of "below poverty line" inhabitants and yet were having to provide the greatest amount of public aid to the disabled and to dependent children per 1,000 population. Tweeten (1979) cited supporting research, reporting that dependency rates were 71.1% in metro areas and 86.5% in nonmetro areas.

Housing equality is another indicator of poverty. Eight percent of rural housing in a Tweeten-reported survey (1975) was considered "substandard." This is twice the rate of substandard housing in urban areas.

The poor are disproportionally concentrated in rural areas. One of six persons in nonmetro areas is classified as "poor." This is contrasted with

one in nine being similarly classified in metro areas. These differences are especially dramatic when one considers that half of the nonmetropolitan poor have jobs. Sixty percent of nonmetropolitan poverty is concentrated among ethnic minority group members who reside in the South. (Tweeten, 1979).

Poverty issues are further complicated by lack of information and differing cultural attitudes concerning social programs. Consequently, there is a low incidence of participation in social programs providing minimum wage coverage as well as unemployment and disability insurance.

We know that schools alone are insufficient mechanisms to improve life quality and aid rural development. In general, rural areas are not sharing adequately in national growth. Technological changes and economic adjustments have resulted in low incomes among rural and small town residents. These events serve to encourage nonmetropolitan migration to the cities. Some of those who leave are skilled; thus, the rural areas lose talent. Others who leave are less skilled and find that they cannot compete with urbanites because they lack both technical and educational training. It has been said that these people contribute significantly to the ranks of the hard-core unemployed. (Eaddy, 1970).

Schools offer one of the few resources available to help rural Americans improve their economic conditions. Yet, little is being done nationally to link school programs with rural economic development. (Mack, 1979).

Moe and Tamblyn (1974) provide a thought-provoking list of innovations which schools might initiate as means of assisting rural development:

- Strengthen and build upon previous school functions.
- Relate school programs to development efforts in the community. (i.e., career development activities for community members and students).

.Provide leadership and competence to deal with development within the school and community.

.Help create a climate for recognition and resolution of issues in development.

.Become a knowledge and resource center for development.

.Encourage and assist students to contribute effectively toward community development.

.Serve as a training center. Schools could formally link with human service programs such as the Extension Service, nutritional, health, mental health, and higher education programs, agencies and services.

.Help secure otherwise unavailable resources.

.Establish and maintain continuing educational development within the school system and among community leaders.

.Help design and maintain research and development systems for planned community growth.

The last point, developmental systems, is especially relevant to this report because, in most cases, it is less likely to occur. This is because it has often been overlooked. Rural schools and rural communities have not been served by the research and development efforts which are most likely to assist them to develop effectively over time.

If activated, many of the innovations cited by Moe and Tamblyn would be helpful but not sufficient conditions for rural development. People need income and that means jobs.

The economic base in many rural communities is narrow and unemployment is high. When unemployment was 18% in urban areas during 1970 it was 25% in rural areas. In 1960, 40% of rural employment was with industries having large numbers of low wage labor. Forty-five percent of the newly created jobs (1969 to 1972) were found in these sorts of industries. (Tweeten, 1979).

Industrial expansion into developing rural areas is indirectly linked with rural education. Smith, Deaton, and Kelch (1978) found that greater educational expenditures increased the probability for industrial plant relocation within a given community. Usually, the grade level attained by rural adult workers more than twenty-five years of age is lower than for urban workers. Tweeten (1979) reported that the median years of schooling completed for this group was three years below the national median and that illiteracy rates were several times the national average. Fratoe (1979) reported that while white farm workers trailed metro and nonmetro nonfarm workers by about 1.2 to 0.8 median school years, minority blacks--men and women--trailed their metropolitan counterparts by 5.7 and 4.0 years. Functional illiteracy was 40% among black males and actually increased from 23.0% to 31.9% for black females. These figures do not fully reflect the problem as these groups, especially older farm-related people, are less likely to pursue adult education opportunities.

Availability of low-cost labor is one of the factors which encourages industrial firms to relocate in rural areas. Highly skilled workers and administrators often are transferred to rural sites because the rural areas do not have a sufficient supply of appropriate labor to meet personnel needs.

Attempts to rely solely on one resource--industrial development--or the other--increased educational opportunity--are not likely to result in satisfactory outcomes for rural areas. Tweeten (1979) reports that fiscal increases in education and vocational-technical training had little impact on poverty and underemployment compared with rural development programs which emphasized job creation through industrialization. In short, human resource programs do not work well acappella--they must be accompanied by job development programs for rural workers.

If we know so much about rural education and rural development what, then, is the problem? Moe and Tamblyn (1974) list five impediments which continue to resurface in rural areas.

1. The inability of industrial firms to provide enough good paying jobs and an inability of organizations and institution to deliver the kinds and quality of services that meet the needs of people they serve.

2. Failure to achieve a size and scale of units appropriate for delivery of social, economic, and governmental services at reasonable cost.

3. Inability to link and integrate elements among organizations, services, and population units from the local to the national level.

4. Failure to include many individuals--especially the poor, minorities, women, the aging, and youth--in community planning efforts.

5. Inability to link citizens and local units of government to national organizations so that effective ways of defining and clarifing policy issues might be implemented.

The Problem With Rural

> It is somewhat misleading to say that the country is becoming more urban, when what is meant is that more people are living in places like White River Junction, Vermont (population 6,311), and fewer in places like Boston, Massachusetts (population 641,000). But it is not altogether misleading, for most of the small urban places (fewer than 2500 inhabitants) are now close enough (in terms of time and travel) to large cities to be part of a metropolitan complex. White River Junction, for example, is now very much influenced by Boston. ...many so-called urban problems (except crime) are more characteristic of rural and small town places than of cities. (Banfield, 1974, p. 4)

> Rural America is for all practical purposes another culture. Lacking knowledge of its workings, we tend to regard it with indifference while we absorb its virtues. Like a less developed society, it is largely passive, submitting to acculturation and even seeking to speed the process -- we damn it for being backward and then for being corrupted. (Robertson & Robertson, 1978)

Rural areas appear to be left out of the mainstream of national policy. Cosby (1979) observed that society tends in general either fails to attend or to actually devalue the needs of rural people.

The inner-city and rural areas share the dubious distinction of having a disproportionately large number of serious, chronic social problems. However, as the maxim goes, it is the "squeaky wheel" which gets attention. This is especially evident when contrasting two population groups which on the surface appear to have little in common.

Problems associated with residents of rural areas often go unnoticed. Those problems which are known are reduced to stereotypic colloquisms which naievely generalize, equating all rural people. This results in a failure to recognize the diversity and range of rural life styles and difficulties. Problems of rural areas, especially of its economically disadvantaged, its minority groups and its migrant workers, are therefore often neglected.

National media has given a great deal of serious attention to the problems of the inner city. Street violence and massive property destruction created within these economically blighted areas are, indeed, difficult to overlook. Consequently, the preponderance of attention, support, and funding are channeled into metropolitan areas. This leaves one-third of the nation's school children who attend nonmetropolitan schools with only 5% of the available research funds, 11% of material or media funds, 13% of vocational aid funds and 13% of the drop-out prevention funds. That two million rural adults would be classified as functionally illiterate; that intelligence scores, grade levels achieved and career aspirations of rural youth would be depressed should come as no suprise. (Muse & Stonebacher, 1979).

Nonmetropolitan areas have always experienced more than a small share of poverty, illiteracy, and malnutrition. (Hassinger, 1978). The incidence of poverty in rural areas is 50 percent higher than it is in urban areas. (Hayman, 1979).

Concurrent with the rural-to-urban turnaround in migration reported earlier by Beale (1976), Schwarzeweller (1979), and Ross, et al. (1979), there has been some increased interest in rural areas. Sher (1980, p. 280) observed that "after decades of relative obscurity, issues relating to education in rural areas are enjoying a minor renaissance across the country." Other influential agents stimulating this interest are organizations such as People United for Rural Education (PURE); the National Rural Center; the ERIC Clearinghouse for Rural Education and Small Schools (ERIC/CRESS); and research dissemination efforts of land grant colleges and universities.

The Status of Rural Development

Cosby (1979) notes that, unlike urban economies which have diversified industries and services providing a wide variety of jobs, rural economies, having been traditionally agrarian, offer fewer, less varied job opportunities.

Cities have expanded beyond the suburbs. Banfield (1974) observed that population density even within metropolitan areas has decreased from 5,400 persons per square mile in 1950 to 3,752 persons per square mile in 1960, to 3,376 persons per square mile in 1970. Relocation of industrial plants, often into less populated areas, has created a demand for skilled labor. While future demand for potential rural employment should increase, many of these newly-created jobs are taken by the new migrants who have had appropriate job training.

Many of these migrants would have lived between one-half to a full generation within metropolitan areas. Some of the migrants who follow this first wave of skilled labor may create additional problems for rural areas. For example, the lure of jobs may bring a number of persons from the inner city. These persons might possess few skills, be accustomed to intermittent, infrequent jobs, and, perhaps, have differing work values. Migrants having differing work values, styles of life, and aspirations might clash with the values of the former rural culture.

The Rural Culture

> The temptation is to describe the rural community; the rural attitude; the rural American. Yet, rural regions differ in economy, in tradition, in idealogy, in population...in attitudes...and orientations ...Rural areas are characterized by great wealth and technological advance on one hand and extreme poverty and resistance to change on the other. (Hughes & Spence, 1971, p. 2).

Currently, urban to rural migrants have better job skills and higher levels of educational attainment than the existing rural population (Cosby, 1979). Lacking specific vocational training and education, rural people would be unprepared for the recently expanded opportunities within their local areas. This may set the stage for the creation of migration patterns which again lead the former rural resident to metropolitan areas--but for a different purpose--access to a more developed and lucrative welfare system. Or, it may force them further into isolated regions away from small developing towns and existing social services.

Regardless of these speculations, this group of previously established rural residents is currently less competitive for high-level positions of the newly arrived industrial, commercial, and service agencies. These consequences appear to defeat the purpose of efforts put forth by predominantly

rural states and regions to attract and secure industrial relocation and development.

Cosby (1979) explains how cultural differences and expectations might limit economic opportunities for rural jobseekers and calls this the "ecology of opportunity." These influences can be demonstrated by examining the creation and maintenance of expectations held about a subset group by the dominant group.

"Amos and Andy," both as a radio and a television production, was severely critized by black Americans as being inaccurate, unfair, and damaging to that struggling minority. Rural populations, especially Southern regions which are predominantly rural--having large numbers of ethnic minority group members--are also adversely affected by the continuation of inaccurate stereotypes in the mass media.

Just as grossly inaccurate cultural expectations concerning blacks were perpetuated and reinforced by the popular media, so the media now subtly encourages the popular misconception that all rural people can be characterized as being naively happy, inarticulate, and, at best, bumblingly shrewd. Television productions such as "Carter Country," "The Dukes of Hazard," and "Flo" consistently remind the viewer of a narrow, stereotypic image of rural inhabitants.

According to Edington (1976, p. 3), one problem concerning rural education is that "until recently the majority of the small school literature, both pro and con, has been opinion, rather than research, oriented." Decisions require information which is specific to a particular group. What is known about rural America suggests that generalizations cannot be made easily. "Rural," paradoxically, is unknowable as a separate classification because the

wide range of life styles, skills, aspirations, resources, and needs of its inhabitants make it many separate entities.

In summary, the research evidence tells us that rural is not, as is commonly accepted, an unifactoral concept; "it" is multifacted. The general population, as well as many social and educational policy makers, poorly discriminate about who rural people are; about what "progress" represents for rural areas; and about what is effective rural planning. These result from a simple fact--lack of usable information.

This fact led the National Seminar on Rural Education to recommend that funds should be available to support the "systematic collection, compilation and analysis of data on the status of rural education." (The National Seminar on Rural Education, 1979)

Rural Education Planning: The How

> Evaluation in the Darwinian sense of natural selection is no longer possible because we have reached the stage of self-reflection. This means that we are no longer naive about the evolutionary process. From now on we will simply have to deliberately intervene in our own further development. Anything about us that is going to change will have to be planned and designed to change. Random change is no longer acceptable. (Mysior, 1980, p. 180)

A similar statement can be made about communities. They are becoming self-reflective and consequently need to plan for future development. The "rural turn around" is a recent occurance which has significant implications for rural planning. These activities require a more thorough understanding of the characteristics of rural communities, their institutions and their development.

Wheelock (1979) observed that data on rural areas are limited in six general areas: (1) equity and quality of rural education; (2) linking rural development to rural education; (3) delivery of services; (4) research and data collection; (5) vocational and career education; and (6) energy. The fourth concern--research and data collection needs--will be the focus of the remainder of this report.

One example of the urgent need for current information involves Public Law 94-142. The recent passage of the Education to All Young Children Act (Public Law 94-142) has brought additional resources, requirements, and public attention concerning the needs of handicapped children. Rural school districts have a significant stake in receiving equitable treatment in the administration of the law. Preliminary evidence from research indicates rural districts are having difficulty in implementing Federal mandates. Problems in recruitment and retention of specially trained staff, in providing and paying for transportion for program operation, and facilitating

parent involvement in planning and decision making are often cited. (Parks and Berman, 1979). Public Law 94-142 regulations specify that any local district with too few eligible children to qualify for a $7,500 allocation of federal funds will receive no direct pass-through funds from their state education agency. These arrangements vary in structure from state-mandated special district systems with massive funding and large separate staffs to agreements between two or more local education agencies to share particular services. Planning and assessment of these various arrangements is lacking.

Research Needs and Issues

The general area concerning the relationship between schooling and community employment and income has not been adequately researched, (Tweeten & Brinkman, 1976).

Wheelock (1979) lists eight important areas which require additional information to facilitate planning:

1. Need for knowledge of the benefits and problems associated with different size schools in rural areas.
2. Need for knowledge of the effects of increased transportation costs for schools.
3. A qualitative measure of educational programs in various regions and types of rural communities.
4. An examination of existing information, demonstration projects, and research needs to assess elements essential to quality rural schools.
5. The development of improved dissemination strategies for sharing research information.

6. Information concerning the distribution patterns of federal funds between metro and nonmetro areas and among varieties of rural schools within nonmetro districts.
7. Research studies which expand our understanding of the social and cultural dynamics of different types of urban and rural school systems.
8. The feasibility of integrating or coordinating appropriate education programs with other social service programs in rural communities.

Specific Research Deficits

A listing of specific research and development deficits includes the following:

- .in the human development area information concerning the impact of career planning with rural students
- .research in areas of occupational knowledge acquisition and transition from education to work in rural areas
- .demographic information about the extent and composition of American youth
- .rural-urban differences concerning the impact of "significant others" on achievement
- .rural-urban differences concerning occupational knowledge
- .rural-urban differences concerning gender variations in occupational knowledge, attainment and achievement
- .personnel development for rural areas
- .sources, types, and processes of educational knowledge in rural areas
- .impacts of curriculum and computer assisted instruction in rural areas

- .the impact of mobile information units, telephone system and computer hookups
- .age variability and youth activities such as leisure time
- .transportation needs
- .the structural contexts which either facilitate or hinder rural youth goals
- .interpersonal behavior and social organization effects on rural youth
- .rural youth attitudes concerning premarital sex, ideal family size, and drug use

The above mentioned research needs are important. However, what appears to be most deficient is the lack of information concerning specific variables which are necessary for making decisions within the rural context. Are these variables the same as for urban areas? This is doubtful as rural areas are quite different from urban areas. Hobbs (1979) reminds us of six fundamental differences between metro and nonmetro environments:

1. There is more heterogeneity in rural America.
2. Patterns of decisions making and leadership in rural communities are different.
3. There is less institutional separation or isolation within the rural community.
4. The school has a broader function within a rural community.
5. Demographic and economic differences exist between rural and urban (particularly suburban) populations.
6. Rural economies are distinctly different.

These differences and especially the realization of the extreme within group variance of nonmetropolitan populations leads to the conclusion that rural planning requires a uniform knowledge base.

How are these planning needs to be met? As discussed earlier, the published statistical tabulations of the National Center for Education Statistics fail to collect important data for many rural school districts. When data on rural districts are available, the sample size tends to be inadequate for disaggregation by certain variables of interest.

The National Assessment of Educational Progress (NAEP) provides data on some rural students. However, this information cannot be broken down by region and cultural group.

Federal accounting procedures do not permit the tabulation of expenditure data according to type of school district. The National Seminar on Rural Education (1979) recommended that data concerning rural areas should display the following characteristics:

1. Include information on student performance; curriculum and program offerings; staff qualifications and limitations; scope and quality of facilities, and other educational resources; the costs of transportation; the costs associated with the instructional program, pupils with handicapping conditions, and related social, economic, and demographic characteristics of rural populations;

2. be based on samples of sufficient size to permit disaggregation by race, sex, region of the country, district and school size, population density, and types and degrees of rurality;

3. employ a more refined definition of rural than "non-metropolitan."

The group recommended that these data collection activities should:

1. Maximize cooperation with state departments of education and local districts in data collection and compilation;

2. review periodically the validity and scope of data bases;

3. be reported in regular publications such as a special rural section of The Condition of Education.

Decision-Based Information Systems: What It Is and What It Means For Rural Education

The need for additional information has been prompted by governmental programs. These have promoted dramatic increases in the amount of information flowing between federal, state and local education agencies. The demand for accurate information has often strained the reporting capabilities of educational and social agencies:

> As the number of administrative applications in an organization proliferates, the development of separate systems...and data sets for each application inevitably produces increasing rates of data redundancy, as the same data elements are used in a number of data sets (applications). In addition to the wasted resources needed to store and collect the redundant data, it also represents an imposition on those from whom it is collected. (Progrow, 1978, p. 4)

Redundancy and proliferation of information hinder decision making. New applications are often developed with new data. Consequently, the condition which exacerbrated the problem repeats itself.

It has been recommended that a data based information system be developed that would have levels for addressing rural educational planning efforts. This could insure that rural communities and schools have the collaborative linkages with district, state, regional and national agencies that enhance effective decision making. (Hayman, 1979)

While this point of view is generally accepted there are others who caution excessive reliance upon quantative methods.

> ...it is easier to identify rural problems in quantative terms -- and use the 'more is better' solution than to specify the structural and functional characteristics of dynamic rural conditions. Logical next steps are better approached when the structural and functional characteristics of the community are known...

> ...what we need to do is find a way to indicate the enabling devices that would allow rural communities to recreate themselves so that they are not always in the crisis posture of petitioning a state or federal agency to 'rescue' them from some emanant catastrophe. (Parks, 1979)

Parks' ideas bear remembering. Nevertheless, planners have to depend more and more on the accumulation and analysis of social data. This has been aided by computers having massive amounts of information which can be simultaneously accessed by numerous users. One of the consequences of this reliance has been a "data blizzard" which has actually served to increase the amount of data being generated (Fried, 1975). As Orr (1978) states "... most decision makers suffer not from a lack of information but from an excess of information... ."

We often collect more data than is actually needed. In most cases, the problem is that needed data is collected but is stored in a manner which makes its access difficult for any purpose other than its orginal one (Orr, 1978).

Data Management

A data base is all of the data which is required for decisions, actions, or outputs. Data bases and data based systems are not novel. Our more complex social and organizational systems have created a need for better methods of processing, storage, and retrieval of large amounts of information. (Orr, 1978).

> While naive advocates of data base systems argue that their principal advantage is to reduce redundant data collection and storage, experience teaches that the most important advantage to be gained by going to a data-based approach is increased consistency in the data. (Orr, 1978, p. 82).

A data base is a collection of records which pertain to a general subject. A logical data base is one in which several base systems are connected so information can be drawn from one system and used in another. Data base management systems (DBMS) are created for three purposes: 1) to provide consistent, timely, accurate information; 2) to provide ready access to information; and 3) to maintain the integrity (security) of stored information. The requirements of a good DBMS are 1) control; 2) data accessibility; and 3) simplicity of use (Walsh, 1978).

Wilkinson (1974) lists nine criteria for good systems:

1. Provide relevant information to users;
2. operate efficiently and economically;
3. insure accurate, accessible information;
4. provide timely information;
5. operate within a consistent, integrated framework;
6. exhibit operational simplicity;
7. provide capacity for needs;
8. maintain flexibility, versatility, adaptability; and stability with changing needs and conditions;
9. motivate users to act in ways which promote goals and objectives.

Information bases have the capability of facilitating better legislative decisions and policies which concern educational agency requests. These agencies would as a result have sufficient lead time to make better plans to use the allocated resources. Data base management systems can provide solutions for changing the couplings of data items as federal and state forms change while allowing organizational units to maintain most types of control over their resources. The only change, according to Progrow (1978, p. 11) is "...that data storage is centrally controlled with decentralized access and utilization maintained."

These procedures currently are used more with fiscal management. No equivalent procedures exist for a most important "...resource in the governance process -- data." (Progrow, 1978, p. 5)

Data management might include the following:

> a) Agenda preparation for the coming year. This suggests that needed data elements would be identified and justified by all information users. Frequency of use would assist in creation of the data formats.
>
> b) Periodic reports concerning data use and suggestions should come from agencies and information users.
>
> c) Data impact statements allow for cost benefit analysis of data collection and for data needs by legislative decision makers.
>
> d) Standardization of data collection time frames. At present, each education program unit uses different points in time to measure program status. Standardization would improve information flows.
>
> There has been little research into how organizations use data and what their data needs are, despite the widespread concern that has been expressed about the amount of data actually being requested and the degree of redundancy and coordination in the data being requested, stored, and processed at the different levels. In order to determine the efficiency of current data handling procedures and the potential for a data base approach to improve the situation, answers to the above questions must be determined. The problem can be operationalized as a production function whereby a given number of distinct elements (x) can satisfy a certain percentage of the organizations' applications (y). Assuming a large value of y, the smaller the value of x needed to support a given value y (i.e., the greater the degree of redundancy) the more feasible the data base approach.
>
> Another consideration is the level and locus of aggregation, as well as the unity of the collected data elements...The need for aggregation arises because most data at the point of origination describes individuals...but is used in aggregated form...for most administrative applications... (Progrow, 1978, p. 8)

Locus of aggregation refers to the point in the data transmission process where the data are processed into aggregated form. The degree of data unification refers to the extent to which elements are collected on a simultaneous, common basis.

There are flexibility and cost tradeoffs to the collecting and receiving agency as to where the locus of aggregation occurs and the degree of unification in the data collection process. Aggregation requires processing effort and it is more difficult to collect data in a unified manner. However, unaggregated unified data is the most flexible type of data to work with. With such data, aggregations can be produced, not only for the individual elements, but also for previously unanticipated combinations of data elements.

If a data base management system is to be useful the data must support the administrative process. This can be facilitated if organizational units determine their data needs in advance. The anticipation of informational needs allows for the creation of a system which effectively responds to user needs.

Orr (1978, p. 82) states it rather well:

> A data base should be designed so that it will be equally valid for all future possible users. If it were not so common and so expensive, the very idea would be funny. We simply don't know enough to design a data base suitable for all future applications.
>
> We can only design for the known and to do so in such a way that when changes--changes in the form of unplanned for requests for data--occur, our systems data base can be augmented to reflect these new requirements. By developing our systems in a logically structured manner, it becomes possible to define the logical data base in such a way that, when new combinations of data occur, they can easily be added to the basis in a systematic manner.

This requires a model. Such a model would, ideally, optimally mirror the real world. Therefore it would consider those entities which exist in the real world as well as those relationships which exist between them. The better the data model, the better and more stable will be the systems design, and the more adaptable will be the system. "All good systems look alike it is only in the bad ones that you find variety." (Orr, 1978, p. 80)

What About Social Data Bases?

Social data bases may be classified by geographical origin, temporally by time-specific classifications, or by the origin of data. Data classified by origin include: Census data, social surveys, record-keeping data, and derived data.

1. Census data - the periodic government counts of population and households.

2. Social surveys - collected by social surveys; these are usually based upon a sample of the population.

3. Record-keeping data - Data obtained by record keeping functions of organizations. These are also known as operational data. STAR, or the Statistical Table Assembly and Retrieval system of the U. S. Social Security Administration is one example.

4. Derived data - Data which is generated or derived by massaging or manipulating data into one of the other categories (Autrey, 1978).

Autrey (1978, pp. 11-13) describes six types of data systems which she believes would be helpful for social planning. These include:

(1) The U. S. Census -- Some organizations provide summary tapes. CENSAC on National CSS, Inc., and CENSTATE on CDC's cybernet are two such services. DUALabs, the Data Use and Access Laboratories has developed software packages for use.

(2) Educational Statistics Information Access Service. This service is offered by the National Center for Education Statistics through INFONET and provides data through several files using the System 2000 data base management system for search and analysis.

(3) Predicts Terminal System. This system contains numerical data base files and is offered by Lockheed through the Predicasts Terminal System. It permits interaction between computational files and interactional files. Users can input their own data and perform calculations using about 100 statistical programs, complete seives, forecasts, plot and tabulate.

(4) Data Resources, Inc. (DRI) - This system is primarily financial in subject. Software packages for statistical analysis allow user construction of models and forecasts. DRI offers U. S. Census Bureau's Current Population Survey and the U. S. Labor Bureau's Wholesale Price Index/Consumer Price Index and other indicators.

(5) SITE II. This is a market analysis system offered by CNCI, Inc. Like Predicasts, it includes social and demographic data from U. S. government agencies. The QUICK QWERY software system can be used to retrieve and analyze data for defined geographic regions.

(6) Annual General Social Survey of the National Research Center - This is based at the University of Chicago. It provides data based on cross-sectional national samples of adults and covers social-economic status, social mobility and other social indicators and is available through the Inter-University Consortium for Political Research.

The problem with many of these systems is that geographical units are often not small enough to be meaningful for local planners within rural areas.

One source of specific information exists for a transient group of rural inhabitants; the migrant workers. The Migrant Student Record Transfer System (MSRTS) developed in 1970 through funding from Title I, the Elementary and Secondary Education Act of 1965 and 1966. MSRTS, assisted by a central computer in Little Rock Arkansas, makes school records available between any two schools in the United States. Basic educational information such as a student's progress in reading and math as well as health information is available for both state directors of migrant programs and to personnel in a local school setting. Currently 500,000 migrant farmworkers are served as part of a reading development program offered by MSRTS (Bove, 1979).

LaRosa and Hackett (1979) report that the MSRTS Math Skills Information System has the potential of providing migrant student information for between 70,000 and 100,000 classroom teachers.

Conclusions

Information systems represent the central nervous system of social organizations such as educational agencies. If the information system fails its function, then the entire organization is in trouble (Orr, 1978). Planning for rural education is hampered because of its nature. Rural as a category is so multi-faceted that specific information is necessary for a particular area of planning. Some informational systems exist. However, many of these are either not designed for or, presently, do not have the data base characteristics which make them useful for rural planning and decision making. That this data exists and that we can now collect and store much greater quantities of data has not changed the problem. In order for data to be useful it must be correct and usable. Information will not be used unless adequate data bases are designed for applications with real-life decisions.

Presently, no such system is known to exist. Careful planning is essential to develop a model and design a useful informational system--the cornerstone of successful decision making for rural areas and rural inhabitants.

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APPENDIX B

AUBURN UNIVERSITY
School of Education
Rural Education Center

Rural Education Information Needs Survey -- Initial Round

Directions: This questionnaire deals with six general information categories. Each category consists of information which might be used in making decisions about educational needs in rural areas and about ways to meet these needs. In this initial round of the survey, you are requested to do two things: (1) In Part A, rank the categories according to your feeling of their importance, and (2) In Part B list five or six specific information items for each category.

A. Ranking

The six categories are listed below. Please rank them according to the importance you feel they should have, based on your own experience, in making decisions about education in rural areas. The most important should be marked "1", the second most important "2", etc. If two or more categories have the same importance, give each the same number.

____ Descriptive Statistics on Students

____ General Population Statistics

____ Aspirations and Attitudes of Students

____ Local Educational Resources Available

____ Other local Resources Available

____ Educational Programs That Work in Other Rural Locations

____ Other (Please specify: _____)

B. Information Item Listing

For each of the general categories, please list five or six specific information items which you feel should be important in making decisions about educational needs and about ways to meet these needs in rural areas. For example, in the "Descriptive Statistics on Students" category, you might want to include sex, age, and past academic performance record. Please be brief and concise.

Needs Survey--Initial Round -- 3

B. Information Item Listing (contd.)

e. Other Local Resources Available:_____

_____

_____

_____

_____

_____

f. Educational Programs that Work in Other Rural Locations:_____

_____

_____

_____

_____

_____

g. Other (Please specify:_____):_____

_____

_____

_____

_____

_____

APPENDIX C

AUBURN UNIVERSITY
School of Education
Center for Rural Education

Rural Education Information Needs Survey -- Second Round

Directions: This questionnaire was developed on the basis of responses to the initial, open-ended questions on information needed for making decisions about educational needs in rural areas. You are now requested to rate the level of importance you believe should be attached to each of the information items listed below. The rating scale ranges from one, meaning you attach little or no importance on an item, to five, meaning you attach a great deal of importance to an item. Any opinions which lie somewhere between "low" importance and "high" importance would, of course, be indicated by a two, three, or four.

Please rate each item by circling the number which indicates your feeling of its importance. Be discriminatory and try to distribute your ratings over the five categories -- that is, try to choose approximately the same number of "1's", "2's", etc. -- this will assist in prioritizing and selecting items to include first in developing the system.

A. Descriptive Statistics on Students

How important is it to know information about student.....

	Importance (Low → High)				
1. Age	1	2	3	4	5
2. Sex	1	2	3	4	5
3. Race	1	2	3	4	5
4. Health status	1	2	3	4	5
5. Marital status	1	2	3	4	5
6. Special talents	1	2	3	4	5
7. Coursework type taken	1	2	3	4	5
8. Past academic performance	1	2	3	4	5
9. Achievement test scores	1	2	3	4	5
10. Family structure	1	2	3	4	5
11. Length of community residence	1	2	3	4	5
12. Distance traveled to school	1	2	3	4	5
13. School attendance	1	2	3	4	5
14. Work after school hours	1	2	3	4	5
15. Work during school hours	1	2	3	4	5
16. Grade level	1	2	3	4	5
17. Number (of students) per grade	1	2	3	4	5
18. Number (of students) per classroom	1	2	3	4	5
19. Number receiving reduced-rate/free meels	1	2	3	4	5
20. I.Q. test scores	1	2	3	4	5
21. Mobility patterns	1	2	3	4	5
22. Career awareness	1	2	3	4	5
23. Grrduate/dropout ratio	1	2	3	4	5

3. Aspirations and Attitudes of Students

How important is it to know information about student.....

	Importance				
	Low				High
24. Leisure interests	1	2	3	4	5
25. Career aspirations	1	2	3	4	5
26. Post-graduation plans	1	2	3	4	5
27. Attitudes toward education	1	2	3	4	5
28. Opinions of school experiences	1	2	3	4	5
29. Opinions of school facilities	1	2	3	4	5
30. Relocation aspirations	1	2	3	4	5
31. Attitudes about parents	1	2	3	4	5
32. Work values	1	2	3	4	5
33. Life goals	1	2	3	4	5
34. Attitudes about others	1	2	3	4	5
35. Attitudes about self (self-concept, etc.)	1	2	3	4	5
36. Anticipated marriage age	1	2	3	4	5
37. Anticipated family size	1	2	3	4	5

C. General Population Statistics

How important is it to know about.....

38. Age distribution	1	2	3	4	5
39. Sex distribution	1	2	3	4	5
40. Racial distribution	1	2	3	4	5
41. Educational attainment	1	2	3	4	5

How important is it to know information about.....

		Importance				
		Low				High
42.	Attitudes toward school	1	2	3	4	5
43.	Attitudes toward education	1	2	3	4	5
44.	Median income	1	2	3	4	5
45.	Housing conditions	1	2	3	4	5
46.	Population growth trends	1	2	3	4	5
47.	Population density	1	2	3	4	5
48.	Household characteristics	1	2	3	4	5
49.	Transportation means	1	2	3	4	5
50.	Sources of income	1	2	3	4	5
51.	Income distribution	1	2	3	4	5
52.	Workforce by age	1	2	3	4	5
53.	Workforce by sex	1	2	3	4	5
54.	Workforce by race	1	2	3	4	5
55.	Leisure recreational activities	1	2	3	4	5
56.	Number of children per family	1	2	3	4	5
57.	Percent receiving public assistance	1	2	3	4	5
58.	Literacy rate	1	2	3	4	5
59.	Nutrition statistics	1	2	3	4	5
60.	Health statistics	1	2	3	4	5
61.	Academic skill remediation programs	1	2	3	4	5
62.	Accessibility of post-secondary programs	1	2	3	4	5
63.	Administrator characteristics	1	2	3	4	5
64.	Adult education programs	1	2	3	4	5
65.	Alternative funding sources	1	2	3	4	5

How important is it to know information about.....

	Importance				
	Low				High
66. Career education programs	1	2	3	4	5
67. CETA programs	1	2	3	4	5
68. Church group activities	1	2	3	4	5
69. Civic club activities	1	2	3	4	5
70. Clearinghouse information	1	2	3	4	5

How important is it to know information about.....

71. Community perceptions about schools	1	2	3	4	5
72. Contact persons for funding programs	1	2	3	4	5
73. Continuing adult education	1	2	3	4	5
74. Co-op education	1	2	3	4	5
75. Cooperatives between schools	1	2	3	4	5
76. Counselor characteristics	1	2	3	4	5
77. Cultural activities	1	2	3	4	5
78. Cross-state cooperative programs	1	2	3	4	5
79. Daycare services	1	2	3	4	5
80. Dental services	1	2	3	4	5
81. Description of post-secondary programs	1	2	3	4	5
82. Early childhood educational programs	1	2	3	4	5
83. Educational funding basis	1	2	3	4	5
84. Evaluation criteria for programs	1	2	3	4	5
85. Evaluation of contact with state department of education	1	2	3	4	5
86. Exemplary programs	1	2	3	4	5

How important is it to know information about.....

		Importance				
		Low				High
87.	Expenditures by education budget category	1	2	3	4	5
88.	Extension service programs	1	2	3	4	5
89.	Funding sources for education programs	1	2	3	4	5
90.	Governmental characteristics	1	2	3	4	5
91.	Health services	1	2	3	4	5
92.	Health education programs	1	2	3	4	5
93.	Hearing services	1	2	3	4	5
94.	Industrial or commercial personnel needs	1	2	3	4	5
95.	Industrial or commercial training programs	1	2	3	4	5
96.	Inservice education needs	1	2	3	4	5
97.	Inservice education programs	1	2	3	4	5
98.	Instructional material	1	2	3	4	5
99.	Library services (school)	1	2	3	4	5
100.	Library services (community)	1	2	3	4	5
101.	Media availability	1	2	3	4	5
102.	Media educational programming	1	2	3	4	5
103.	Media use	1	2	3	4	5
104.	Mental health services	1	2	3	4	5
105.	Mobile educational services	1	2	3	4	5
106.	Natural resources	1	2	3	4	5
107.	Nutrition education programs	1	2	3	4	5
108.	Operating budgets	1	2	3	4	5
109.	Parent education	1	2	3	4	5
110.	Parent opinions about schools	1	2	3	4	5

How important is it to know information about.....

		Importance				
		Low				High
111.	Parent Teacher Associations/Organizations	1	2	3	4	5
112.	Physical education	1	2	3	4	5
113.	Physical plant description	1	2	3	4	5
114.	Potential funding sources	1	2	3	4	5
115.	Preservice programs	1	2	3	4	5
116.	Private education	1	2	3	4	5
117.	Programs for gifted/talented students	1	2	3	4	5
118.	Programs for handicapped students	1	2	3	4	5
119.	Reasons teachers give for termination	1	2	3	4	5
120.	Recreational opportunities	1	2	3	4	5
121.	Remedial specialist training	1	2	3	4	5

How important is it to know information about.....

122.	Resource use in schools (energy)	1	2	3	4	5
123.	Service clubs	1	2	3	4	5
124.	Social services (governmental)	1	2	3	4	5
125.	Special interest groups	1	2	3	4	5
126.	Speech services	1	2	3	4	5
127.	State educational services	1	2	3	4	5
128.	Summer education programs	1	2	3	4	5
129.	Summer youth programs	1	2	3	4	5
130.	Teacher characteristics	1	2	3	4	5
131.	Teacher incentives	1	2	3	4	5
132.	Teacher mobility patterns	1	2	3	4	5
133.	Teacher/pupil ratio	1	2	3	4	5

How important is it to know information about.....

		Importance				
		Low				High
134.	Teacher recruitment	1	2	3	4	5
135.	Teacher supply/demand	1	2	3	4	5
136.	Teacher training needs	1	2	3	4	5
137.	Transportation services	1	2	3	4	5
138.	Tutorial programs	1	2	3	4	5
139.	Vocational education	1	2	3	4	5
140.	Youth organizations	1	2	3	4	5

APPENDIX D
INFORMATION NEEDS SURVEY
ITEM STATISTICS BY STATE

ITEM NO.		AL N=12	AR N=9	FL N=8	GA N=9	LA N=7	NC N=7	SC N=9	TN N=8	TOTAL
1	M	3.92	4.78	3.25	4.00	4.43	4.43	3.67	4.11	4.06
	SD	.76	.42	1.20	1.25	.73	.73	1.56	.87	1.09
2	M	3.67	4.00	3.88	3.44	3.29	4.00	3.11	3.89	3.66
	SD	.75	1.41	.93	1.57	1.28	.76	1.59	.99	1.24
3	M	3.42	3.67	3.50	2.67	3.00	4.00	2.56	3.56	3.29
	SD	1.11	1.41	1.41	1.70	1.51	.76	1.50	1.57	1.47
4	M	3.75	4.22	3.63	3.78	4.29	3.29	3.33	4.00	3.79
	SD	.60	.63	1.22	1.62	.70	.70	1.25	1.05	1.08
5	M	3.08	3.22	2.63	2.33	3.14	2.29	3.00	3.00	2.86
	SD	1.19	1.13	.86	.82	.99	1.03	1.41	1.33	1.17
6	M	3.82	3.33	3.63	3.89	4.00	3.71	3.67	3.67	3.71
	SD	.94	1.05	1.11	1.10	.53	1.03	.82	.94	.98
7	M	4.17	3.33	3.50	4.33	4.14	3.71	3.33	3.78	3.80
	SD	.90	.94	1.22	.67	.64	1.28	.94	.63	.99
8	M	4.17	4.00	3.50	4.67	4.14	3.86	3.22	4.00	3.96
	SD	.90	1.05	1.32	.47	.35	1.12	1.03	.67	1.01
9	M	4.08	3.78	2.88	4.44	4.00	4.00	2.89	3.44	3.70
	SD	1.04	.92	1.17	.50	.76	1.07	1.45	.68	1.13
0	M	3.42	3.22	2.75	3.22	3.00	3.00	3.33	2.89	3.13
	SD	1.04	1.31	1.30	.92	.76	.53	.82	.74	1.00
1	M	3.00	2.89	2.63	2.56	2.14	1.71	3.33	2.67	2.67
	SD	1.08	1.52	1.41	1.17	.83	.70	1.05	1.33	1.26
2	M	2.75	3.44	2.00	2.67	2.29	2.71	2.78	3.00	2.73
	SD	.60	1.26	.87	1.05	1.03	1.39	1.23	.94	1.12
3	M	3.92	3.89	3.00	4.44	3.71	3.86	3.33	4.00	3.79
	SD	1.04	.74	1.41	.50	1.16	.64	1.33	.94	1.09
4	M	3.67	3.00	2.00	3.00	2.14	2.29	3.11	3.56	3.09
	SD	.85	1.41	.87	1.33	1.12	.88	.99	1.07	1.24
5	M	3.67	3.56	3.00	3.22	3.86	3.57	2.78	3.78	3.50
	SD	1.11	1.07	1.41	1.31	.99	.90	1.40	.79	1.16
6	M	3.92	4.33	3.38	4.33	4.00	4.14	3.67	4.11	4.00
	SD	.95	.82	1.32	.82	1.41	.64	1.15	.99	1.08
7	M	2.67	3.56	3.63	3.11	3.29	3.00	3.00	3.33	3.10
	SD	1.11	1.17	1.11	1.29	1.39	1.31	1.49	1.56	1.33
8	M	3.58	4.11	3.50	3.44	3.43	3.57	3.33	3.78	3.51
	SD	1.32	.99	1.41	1.07	1.40	1.40	1.33	1.23	1.28

* M=Mean ; SD=Standard Deviation

INFORMATION NEEDS SURVEY
ITEM STATISTICS BY STATE

EM NO.		AL N=12	AR N=9	FL N=8	GA N=9	LA N=7	NC N=7	SC N=9	TN N=8	TOTAL
9	M	3.42	3.00	2.38	2.33	2.29	2.86	2.67	2.56	2.73
	SD	1.04	1.05	.86	.94	1.03	1.12	1.33	.83	1.11
0	M	3.42	3.00	2.75	3.33	3.86	3.57	3.22	3.11	3.27
	SD	1.19	1.25	1.09	1.15	.99	1.05	1.13	.99	1.16
	M	3.17	3.33	2.63	3.44	3.14	2.86	3.00	3.33	3.13
	SD	.90	1.05	1.32	.96	.83	1.12	1.41	.82	1.09
2	M	3.75	3.33	3.00	3.78	2.86	3.43	3.13	3.89	3.34
	SD	.60	1.05	1.41	1.13	.99	1.05	1.17	.74	1.08
3	M	3.55	2.89	3.00	4.11	2.57	3.86	3.44	3.56	3.42
	SD	.65	1.29	1.12	.74	.90	.83	1.34	1.17	1.16
4	M	2.75	2.11	2.75	3.00	3.00	2.86	2.63	2.89	2.77
	SD	.72	1.10	1.09	1.05	.76	.64	.70	1.10	.98
5	M	4.00	3.78	2.38	4.11	3.29	4.29	3.38	4.22	3.91
	SD	.82	1.40	.86	.74	1.03	.70	1.22	.79	1.07
6	M	3.58	3.78	2.75	4.44	3.14	3.71	3.63	3.11	3.70
	SD	.86	1.23	1.09	.68	.99	.88	.86	1.20	1.09
7	M	4.08	4.00	2.63	4.33	3.86	4.14	3.25	4.11	3.96
	SD	.64	1.25	1.32	1.05	.64	.83	1.48	.74	1.04
8	M	3.50	3.22	3.00	3.78	4.00	3.29	2.88	4.00	3.48
	SD	.87	1.13	1.41	.79	.76	1.03	.93	82	1.02
	M	3.17	3.11	2.38	3.11	3.57	2.71	2.50	2.67	2.91
	SD	.80	.57	1.11	.99	.73	.70	1.12	.94	.96
	M	2.67	3.11	3.25	2.56	2.71	2.57	3.75	2.78	2.91
	SD	.62	1.37	1.20	1.26	.88	.73	.97	1.23	1.13
	M	3.75	3.11	2.75	3.89	3.43	4.00	3.38	3.44	3.48
	SD	1.01	1.73	1.09	1.10	.73	.76	1.22	1.50	1.26
	M	4.50	3.67	3.63	4.33	3.57	4.00	3.50	4.22	3.97
	SD	.50	1.15	1.22	.82	.49	.76	1.22	.92	.99
	M	4.08	3.89	3.88	4.33	4.14	4.43	3.50	4.44	4.09
	SD	.76	1.20	1.17	.47	.35	.73	1.50	.50	.96
	M	3.83	3.33	4.00	4.00	2.86	4.00	3.50	4.22	3.74
	SD	.69	1.25	1.00	1.33	1.25	.76	1.32	1.03	1.16
	M	4.33	4.11	4.00	4.78	3.86	4.43	3.75	4.67	4.26
	SD	.75	.99	1.00	.42	1.36	.49	1.64	.67	1.03
	M	2.50	2.00	2.25	2.33	1.86	1.86	2.38	2.11	2.19
	SD	.76	.82	1.30	1.25	.83	.99	.48	1.10	1.00

INFORMATION NEEDS SURVEY
ITEM STATISTICS BY STATE

ITEM NO.		AL N=12	AR N=9	FL N=8	GA N=9	LA N=7	NC N=7	SC N=9	TN N=8	TOTAL
37	M	2.25	2.33	2.13	2.00	1.71	2.00	1.88	2.22	2.09
	SD	1.09	.94	1.36	.94	.88	.76	.78	1.03	1.02
38	M	3.50	3.78	3.88	3.78	3.14	3.57	3.63	3.78	3.64
	SD	.87	.79	.78	.92	.99	1.05	.99	.92	.93
[illegible]	M	3.33	3.11	3.13	2.78	2.43	2.57	3.25	3.33	3.03
	SD	.85	1.10	1.36	1.13	1.05	.90	.97	.67	1.06
[illegible]	M	3.67	3.22	3.38	2.78	2.86	3.57	3.25	2.56	3.17
	SD	.75	1.13	1.58	1.13	.99	.90	1.09	.96	1.14
[illegible]	M	3.92	4.22	3.50	4.11	4.14	4.14	3.75	4.33	4.01
	SD	.49	.79	.87	.74	.64	.83	1.20	.47	.81
[illegible]	M	4.00	4.00	3.25	4.33	3.71	4.29	3.88	4.44	4.00
	SD	.71	.94	1.30	1.05	1.28	.70	1.27	.50	1.05
[illegible]	M	3.83	4.00	3.25	4.33	3.57	4.29	3.63	4.22	3.90
	SD	.69	.94	1.39	.94	1.29	.70	1.41	.79	1.09
44	M	3.00	3.22	2.63	3.44	3.43	3.14	3.78	3.56	3.27
	SD	1.08	1.03	.86	.68	1.05	.64	1.03	.68	.97
45	M	3.50	3.33	2.75	3.11	2.86	3.14	3.56	3.67	3.27
	SD	.87	1.25	.97	.74	1.12	.64	1.07	.82	1.00
46	M	4.08	3.78	3.50	3.56	3.71	3.29	3.78	3.78	3.71
	SD	.76	1.03	1.32	.96	1.28	1.16	1.13	1.03	1.10
47	M	3.17	3.56	3.75	2.89	3.71	2.57	3.56	3.22	3.30
	SD	.90	.83	1.09	.57	.88	.90	.96	1.13	.99
[illegible]	M	3.25	3.00	2.63	2.44	2.57	2.43	2.67	3.00	2.79
	SD	.83	1.05	1.11	1.26	.90	1.05	.67	.82	1.01
[illegible]	M	2.83	3.33	2.50	2.78	2.14	2.86	2.67	3.63	2.86
	SD	.90	1.15	1.12	1.47	.99	.99	.82	1.11	1.16
[illegible]	M	3.67	3.11	3.00	3.11	3.57	2.57	3.11	3.00	3.17
	SD	.75	.99	1.22	1.10	.73	.90	.87	.94	1.00
[illegible]	M	3.50	3.78	2.75	3.11	2.86	3.29	3.44	3.44	3.30
	SD	1.12	.63	1.30	.87	.83	1.03	.96	.68	1.00
[illegible]	M	3.17	3.33	3.00	3.00	2.57	2.43	3.56	3.22	3.07
	SD	1.07	.47	1.00	1.25	1.18	.90	.96	.79	1.03
53	M	3.25	3.33	2.75	2.89	2.57	2.43	3.22	2.44	2.90
	SD	1.09	.47	1.20	1.29	1.40	.73	.92	1.07	1.11
54	M	2.83	3.00	2.50	2.67	2.43	2.57	2.67	2.67	2.69
	SD	1.21	.82	1.41	1.05	1.29	1.18	1.05	1.15	1.17

INFORMATION NEEDS SURVEY
ITEM STATISTICS BY STATE

ITEM NO.		AL N=12	AR N=9	FL N=8	GA N=9	LA N=7	NC N=7	SC N=9	TN N=8	TOTAL
55	M	2.75	2.44	3.00	3.33	3.29	2.71	2.44	2.89	2.84
	SD	1.01	1.17	1.00	1.15	1.03	.70	.83	.74	1.02
56	M	3.17	3.22	2.75	3.22	3.00	3.14	2.89	3.67	3.14
	SD	.90	1.03	1.20	.63	1.07	.35	.74	.82	.93
57	M	3.67	3.44	2.50	3.33	3.29	3.57	3.33	3.89	3.40
	SD	.75	1.07	1.00	.82	1.28	.49	.67	1.20	1.01
58	M	4.17	3.89	3.38	4.56	3.29	4.14	4.00	4.22	3.99
	SD	.90	.99	1.49	.50	1.16	.64	1.41	1.03	1.13
59	M	3.67	3.67	2.50	3.56	2.71	2.57	3.56	4.11	3.36
	SD	.94	.67	1.12	1.17	1.03	.90	1.07	.99	1.13
60	M	3.67	3.78	2.63	3.89	2.71	2.86	3.44	4.11	3.44
	SD	.85	.63	1.32	1.20	1.03	.64	1.26	1.29	1.18
61	M	3.33	3.33	2.88	4.22	4.14	3.86	3.33	3.89	3.60
	SD	.75	.94	1.45	.63	.35	.64	1.33	.74	1.02
62	M	2.83	3.78	3.25	3.89	3.71	3.86	3.22	4.00	3.53
	SD	.80	.92	1.20	.87	.70	.83	1.13	.94	1.02
63	M	3.25	3.22	3.25	3.67	3.14	3.14	2.78	2.78	3.16
	SD	.92	1.03	1.30	.94	1.25	1.12	1.13	1.31	1.15
64	M	3.25	4.00	3.13	3.89	3.14	3.43	3.44	3.67	3.50
	SD	.72	.82	1.05	.31	.64	.49	1.17	1.15	.91
65	M	3.42	4.33	3.25	3.33	3.57	3.29	3.67	3.78	3.59
	SD	1.26	.82	1.20	1.25	1.18	1.28	1.56	1.31	1.29
66	M	3.67	4.11	3.75	3.67	2.71	3.29	3.33	4.00	3.60
	SD	.75	.74	1.09	.94	1.39	1.16	1.15	1.05	1.10
67	M	3.17	3.33	2.50	2.44	2.86	2.57	3.22	2.78	2.89
	SD	1.21	1.33	1.32	.96	1.36	1.05	1.31	1.13	1.26
68	M	2.83	3.11	1.88	2.56	2.86	2.57	2.67	3.22	2.73
	SD	.99	1.20	1.05	1.26	.83	.73	1.25	1.31	1.17
69	M	2.67	2.78	2.13	2.44	3.00	2.29	2.78	2.89	2.63
	SD	.94	.63	.93	1.07	.76	.70	1.40	1.20	1.03
70	M	2.17	2.44	2.13	2.33	2.14	2.00	2.78	2.22	2.29
	SD	.90	.96	.78	.82	.99	.93	1.13	1.13	.99
71	M	3.83	4.22	3.38	4.22	4.14	4.14	3.67	4.44	4.00
	SD	.55	.63	1.32	.92	.64	.64	1.15	.68	.91
72	M	3.25	3.44	2.63	3.50	3.86	3.43	3.78	2.78	3.32
	SD	1.30	1.64	1.49	1.22	.83	.73	1.13	.79	1.27

INFORMATION NEEDS SURVEY
ITEM STATISTICS BY STATE

ITEM NO.		AL N=12	AR N=9	FL N=8	GA N=9	LA N=7	NC N=7	SC N=9	TN N=8	TOTAL
73	M	3.33	3.78	4.00	3.78	3.57	3.43	3.11	4.00	3.61
	SD	.62	.92	.87	.79	1.50	.90	.99	.82	.98
74	M	3.25	4.00	3.63	3.11	2.86	2.86	3.33	3.67	3.36
	SD	1.01	.82	1.11	.74	1.64	.99	.82	.82	1.07
75	M	3.33	4.00	2.88	3.67	2.86	3.50	3.56	3.89	3.48
	SD	.75	.67	1.05	.94	1.46	.76	1.34	.99	1.08
76	M	3.67	3.67	3.25	3.89	3.57	3.57	3.11	3.22	3.50
	SD	.94	1.41	1.20	1.10	.73	1.18	1.29	1.23	1.18
77	M	2.50	3.00	2.88	3.00	2.29	2.00	2.67	2.67	2.64
	SD	.87	1.15	1.17	.82	1.28	.76	1.15	1.33	1.12
78	M	2.67	3.44	2.38	3.00	3.43	3.14	3.00	2.89	2.97
	SD	.94	.83	.86	1.33	.90	.64	1.33	1.10	1.08
79	M	3.33	3.56	2.75	3.56	2.00	3.43	3.33	3.78	3.26
	SD	1.31	1.07	1.30	1.17	1.20	.49	1.15	.79	1.22
80	M	3.17	3.00	2.50	3.11	2.71	2.71	3.00	3.56	3.00
	SD	1.21	1.15	1.12	1.45	.88	.70	1.25	.96	1.17
81	M	2.58	3.67	3.13	3.78	3.57	3.71	3.11	3.44	3.33
	SD	.86	.94	.78	.79	.73	.70	1.10	1.26	1.01
82	M	3.58	4.22	3.50	4.11	3.71	4.14	3.33	3.78	3.79
	SD	.86	1.03	1.12	.99	1.03	.64	1.15	1.03	1.04
83	M	3.67	3.56	3.50	4.00	4.14	4.14	3.11	3.67	3.70
	SD	.85	1.34	1.41	1.25	.83	1.12	1.37	1.15	1.22
84	M	3.00	3.33	3.50	4.11	4.14	3.71	3.22	4.00	3.59
	SD	.82	1.25	1.41	.87	.83	1.16	1.47	.82	1.18
85	M	2.75	3.11	3.50	3.56	3.86	3.57	3.11	2.56	3.20
	SD	1.01	1.20	1.41	1.07	.64	1.18	1.45	1.42	1.27
86	M	3.00	3.33	3.13	4.00	3.57	3.43	3.33	3.11	3.35
	SD	1.21	1.15	1.17	.82	.73	1.05	1.41	1.29	1.18
87	M	3.33	3.33	2.63	4.00	4.29	3.29	3.11	2.75	3.33
	SD	.85	1.15	1.22	.82	.88	.70	1.29	1.39	1.18
88	M	2.92	3.67	3.63	3.00	3.14	2.86	3.22	3.25	3.20
	SD	.86	1.15	.86	.67	1.25	.83	1.13	.97	1.02
89	M	3.17	4.00	3.25	3.78	4.57	4.57	3.33	4.00	3.77
	SD	.80	1.25	1.30	1.13	.49	.49	1.33	.71	1.13
90	M	3.08	2.89	2.88	3.33	3.00	2.71	3.22	2.38	2.96
	SD	.64	1.10	1.17	1.15	1.41	.45	1.02	1.22	1.08

INFORMATION NEEDS SURVEY
ITEM STATISTICS BY STATE

ITEM NO.		AL N=12	AR N=9	FL N=8	GA N=9	LA N=7	NC N=7	SC N=9	TN N=8	TOTAL
91	M	3.50	3.33	3.50	3.56	3.43	2.86	3.22	3.50	3.38
	SD	.76	1.05	1.32	1.17	.49	.83	1.23	.87	1.02
92	M	3.75	3.44	3.13	3.89	3.29	3.29	3.33	3.75	3.51
	SD	.83	.68	1.27	.99	1.03	.70	1.25	.97	1.02
93	M	3.08	3.33	3.00	3.44	3.29	2.57	3.11	3.13	3.13
	SD	.95	.94	1.20	1.17	.70	.73	1.20	1.27	1.07
94	M	3.42	3.78	3.29	4.33	3.00	3.57	3.00	4.00	3.56
	SD	1.26	1.23	1.28	.47	1.20	.90	1.49	.71	1.21
95	M	3.08	3.89	3.88	4.11	3.00	3.43	2.78	4.38	3.55
	SD	1.19	1.10	1.27	.74	1.41	.73	1.31	.48	1.21
96	M	3.83	3.39	3.88	4.11	4.00	3.86	3.11	3.71	3.79
	SD	.90	.87	.78	.74	.76	1.25	1.29	1.16	1.02
97	M	3.83	3.89	4.13	4.11	3.71	3.86	3.22	3.50	3.78
	SD	.80	.87	.78	.74	1.39	1.25	1.23	1.22	1.08
98	M	3.50	4.33	3.75	4.56	4.14	4.71	3.56	3.50	3.97
	SD	.65	1.05	1.39	.50	.64	.45	1.34	1.12	1.06
99	M	3.83	4.00	3.75	4.00	3.71	4.57	3.44	3.75	3.87
	SD	.69	.82	1.30	.94	.70	.49	1.26	1.09	.99
100	M	3.33	4.00	3.25	3.44	3.43	3.71	3.22	3.75	3.51
	SD	.94	.67	1.39	.96	.73	.88	1.13	.83	1.00
101	M	3.00	3.44	3.25	3.44	3.14	3.29	3.67	3.25	3.30
	SD	1.08	1.17	1.09	.83	1.12	.88	1.15	.66	1.04
102	M	2.92	3.00	3.13	3.33	2.86	3.00	3.33	2.88	3.06
	SD	1.04	.67	1.05	.82	.99	1.07	1.05	1.05	.99
103	M	3.08	3.22	2.63	3.11	3.00	3.43	3.67	3.00	3.14
	SD	.86	.92	1.11	.87	.76	.49	1.05	1.00	.95
104	M	3.33	4.11	2.75	3.44	3.57	3.00	3.11	3.50	3.36
	SD	1.18	.99	.97	1.26	1.29	1.07	1.37	1.32	1.25
105	M	2.75	3.33	3.00	3.22	3.00	2.14	2.89	2.88	2.91
	SD	.60	1.33	1.22	1.03	.93	.99	1.20	1.17	1.11
106	M	3.17	3.89	3.86	3.11	3.86	3.29	3.67	3.25	3.49
	SD	.90	.74	1.25	.87	.99	1.03	1.25	1.20	1.08
107	M	3.58	3.56	3.25	3.33	3.14	3.29	3.44	3.63	3.42
	SD	1.19	1.07	1.09	1.49	.99	1.03	1.26	.86	1.16
108	M	3.83	4.56	3.50	4.11	4.43	4.43	3.56	3.50	3.97
	SD	.90	.68	1.32	.87	.73	.73	1.34	1.12	1.08

INFORMATION NEEDS SURVEY
ITEM STATISTICS BY STATE

ITEM NO.		AL N=12	AR N=9	FL N=8	GA N=9	LA N=7	NC N=7	SC N=9	TN N=8	TOTAL
109	M	3.67	3.33	3.13	3.63	3.71	4.00	3.33	3.44	3.52
	SD	1.03	1.25	1.54	.70	.70	.76	.94	1.07	1.07
110	M	3.83	4.00	3.50	4.25	3.71	4.00	3.67	3.56	3.81
	SD	.90	.94	1.32	1.09	1.16	.76	1.33	1.17	1.12
111	M	3.17	2.67	3.50	3.00	2.86	3.43	2.67	2.67	2.99
	SD	1.14	1.15	1.12	1.22	1.12	.90	1.15	1.15	1.17
112	M	2.75	2.44	3.25	3.75	3.14	3.43	3.56	2.89	3.12
	SD	.72	.96	1.09	.83	.83	.73	1.17	1.20	1.04
113	M	2.75	2.67	3.88	3.38	3.00	3.86	2.67	3.11	3.12
	SD	.60	.82	.78	.99	.76	.64	1.05	.99	.96
114	M	3.50	4.00	3.88	3.75	3.71	4.00	3.56	3.67	3.74
	SD	1.12	.67	1.27	1.20	1.28	.76	1.26	1.15	1.12
115	M	2.83	2.33	3.13	4.00	3.14	3.29	2.78	3.00	3.03
	SD	.80	.94	1.27	.87	1.12	1.03	.79	.94	1.06
116	M	2.58	2.22	3.75	2.63	2.14	2.14	2.89	2.44	2.61
	SD	1.32	1.13	1.09	.99	1.12	.64	.87	.96	1.16
117	M	3.25	3.33	4.00	4.25	4.00	4.00	3.33	3.78	3.70
	SD	.92	1.33	1.00	.83	.53	.53	1.15	.92	1.03
118	M	3.50	4.11	3.38	4.50	4.14	3.86	3.44	3.89	3.83
	SD	.76	.74	1.49	.50	.83	.83	1.26	.74	1.01
119	M	3.42	2.78	3.38	4.13	3.29	3.43	2.89	3.33	3.32
	SD	1.11	1.40	1.32	1.05	.45	1.50	1.59	.82	1.27
120	M	2.92	3.44	2.88	3.50	3.14	2.71	3.22	3.67	3.19
	SD	.86	.96	.93	1.00	.64	.88	1.23	.94	1.00
121	M	3.33	3.78	3.00	3.75	3.43	3.29	3.33	3.44	3.42
	SD	.85	1.13	1.41	.83	.90	.70	1.15	.83	1.03
122	M	3.00	3.22	3.00	3.38	3.43	4.00	3.00	3.22	3.28
	SD	1.00	.79	1.41	.99	1.05	.93	1.25	.92	1.09
123	M	2.25	2.33	2.88	3.75	2.57	2.00	2.67	2.56	2.49
	SD	.83	.94	1.17	1.20	1.18	.53	1.33	1.07	1.04
124	M	2.75	2.89	2.88	4.00	2.57	2.29	3.33	3.44	2.87
	SD	.60	1.29	1.17	.87	.90	.45	.94	.96	1.03
125	M	2.25	3.00	2.88	2.63	2.57	2.43	2.78	3.22	2.68
	SD	.72	1.25	1.17	.99	.73	.73	1.13	.92	1.06
126	M	2.92	3.78	2.63	4.25	3.43	2.86	3.11	3.33	3.25
	SD	1.04	.92	1.49	.83	.90	.64	1.10	1.15	1.13

INFORMATION NEEDS SURVEY
ITEM STATISTICS BY STATE

ITEM NO.		AL N=12	AR N=9	FL N=8	GA N=9	LA N=7	NC N=7	SC N=9	TN N=9	TOTAL
27	M	3.08	4.00	3.25	3.38	3.71	3.29	3.44	3.56	3.45
	SD	1.04	.82	1.09	.99	.70	.45	1.07	1.07	.99
28	M	2.92	3.78	3.25	3.63	3.29	2.43	3.11	3.67	3.26
	SD	1.11	1.13	.83	.70	1.39	1.05	.99	1.15	1.14
29	M	3.25	3.44	2.88	3.50	3.43	2.86	3.56	3.78	3.35
	SD	1.09	1.07	1.62	.71	1.05	.99	1.07	[illegible]	1.11
30	M	3.75	3.56	3.88	4.38	4.14	3.86	3.22	3.67	3.78
	SD	.72	1.64	.93	.70	.83	.99	1.47	.94	1.13
31	M	4.00	4.11	3.75	4.67	4.00	4.14	3.11	3.88	3.96
	SD	1.00	1.37	1.09	.47	.93	.64	1.66	.93	1.16
32	M	2.92	3.56	3.75	3.67	3.14	3.00	2.89	2.75	3.20
	SD	.76	1.34	.97	.67	1.12	.93	1.29	.97	1.08
33	M	3.92	4.11	4.00	4.33	3.00	3.57	3.89	4.00	3.88
	SD	.86	.99	1.22	.94	.93	1.40	1.45	.87	1.15
34	M	3.50	3.44	3.88	4.00	3.57	3.71	3.44	3.13	3.58
	SD	.87	.96	1.27	.94	1.05	1.03	1.26	.93	1.07
35	M	3.42	3.78	3.50	4.11	3.29	3.71	3.44	3.25	3.57
	SD	.86	1.03	1.12	.87	1.03	1.03	1.42	1.20	1.11
36	M	3.58	3.78	3.75	4.11	3.14	4.14	3.56	4.00	3.75
	SD	1.04	1.13	1.48	.87	1.25	.64	1.50	.87	1.17
37	M	3.17	3.67	2.75	3.33	3.00	2.86	3.11	3.38	3.17
	SD	1.21	.94	1.09	.94	.76	.83	1.37	.70	1.06
38	M	3.17	3.67	3.25	3.11	3.43	2.71	3.33	3.00	3.22
	SD	.99	1.05	1.09	1.10	.73	1.03	1.05	.71	1.02
39	M	3.92	4.33	4.13	4.11	4.00	3.86	3.78	4.25	4.04
	SD	.95	.67	1.27	.99	.53	.35	1.13	.66	.91
40	M	3.50	3.11	3.00	4.11	3.14	3.00	3.22	3.50	3.35
	SD	.96	1.29	1.41	.74	.83	.53	1.47	1.12	1.15

APPENDIX E
INFORMATION NEEDS SURVEY
ITEM STATISTICS FOR RESPONDENT CATEGORY

ITEM NO.		RURAL (K-12) EDUCATOR N=28	REGIONAL OR STATE EDUCATOR N=10	LOCAL AGENCY MEMBER N=13	POST SECONDARY EDUCATOR N=8	RURAL GOVERNMENT REPRESENTATIVE N=10	TOTAL N=69
1	M	4.03	4.80	3.69	4.38	3.60	4.06
	SD	1.13	.40	.82	.70	1.50	1.09
2	M	3.55	4.20	3.15	4.00	3.80	3.66
	SD	1.19	1.17	1.1[illegible]	1.12	1.33	1.24
3	M	3.07	4.00	2.92	4.00	3.10	3.29
	SD	1.51	1.10	1.21	1.32	1.70	1.47
4	M	3.93	3.40	4.08	3.75	3.40	3.79
	SD	1.01	1.50	.83	.33	1.02	1.08
5	M	2.83	2.90	2.69	3.38	2.70	2.86
	SD	1.15	1.22	1.07	1.22	1.19	1.17
6	M	2.83	3.80	3.92	3.29	3.30	3.71
	SD	.83	1.08	.92	1.03	1.10	.98
7	M	3.97	3.90	3.62	3.88	3.40	3.80
	SD	.96	.70	.92	1.05	1.20	.99
8	M	4.00	4.30	4.00	4.25	3.20	3.96
	SD	.91	.78	.88	.83	1.33	1.01
9	M	3.83	4.00	3.23	4.38	3.10	3.70
	SD	1.12	.77	.89	.86	1.37	1.13
10	M	3.21	3.50	3.08	3.00	2.70	3.13
	SD	.89	.92	1.14	.50	1.27	1.00
11	M	2.48	3.30	2.46	3.63	2.10	2.67
	SD	1.07	1.19	1.39	.86	1.30	1.26
12	M	2.66	2.70	2.46	3.00	3.10	2.73
	SD	1.03	1.19	.84	1.12	1.45	1.12
13	M	3.93	4.00	3.46	4.25	3.20	3.79
	SD	1.11	.89	.93	.66	1.33	1.09
14	M	2.76	3.30	3.23	4.00	2.90	3.09
	SD	1.10	1.19	1.05	1.32	1.37	1.24
15	M	3.28	3.90	3.69	3.75	3.30	3.50
	SD	1.23	.83	.82	1.64	.90	1.16
16	M	3.83	4.40	4.08	4.50	3.60	4.00
	SD	1.21	.66	.92	.71	1.20	1.08

*M=Mean ; SD=Standard Deviation

INFORMATION NEEDS SURVEY
ITEM STATISTICS FOR RESPONDENT CATEOGRY

ITEM NO.		RURAL (K-12) EDUCATOR N=28	REGIONAL OR STATE EDUCATOR N=10	LOCAL AGENCY MEMBER N=13	POST SECONDARY EDUCATOR N=8	RURAL GOVERNMENT REPRESENTATIVE N=10	TOTAL N=69
17	M	3.31	3.10	3.31	2.75	2.50	3.10
	SD	1.34	1.37	1.20	1.20	1.28	1.33
18	M	3.66	3.50	3.77	3.63	2.70	3.51
	SD	1.29	1.28	1.12	1.11	1.27	1.28
19	M	2.86	2.70	2.38	2.75	2.80	2.73
	SD	1.20	1.00	.74	1.09	1.25	1.11
20	M	3.41	3.20	3.00	3.63	3.00	3.27
	SD	1.03	1.08	1.11	1.41	1.26	1.16
21	M	3.17	3.40	3.08	4.00	2.10	3.13
	SD	1.02	.92	.92	.71	1.14	1.09
22	M	3.45	3.70	3.54	3.63	2.78	3.43
	SD	1.10	.78	.93	1.32	1.03	1.08
23	M	3.41	4.20	2.92	4.43	2.60	3.42
	SD	1.03	.60	1.00	.49	1.43	1.16
24	M	2.89	3.00	2.46	3.13	2.30	2.77
	SD	.86	.77	.84	1.17	1.19	.98
25	M	3.68	4.10	4.23	4.38	3.60	3.91
	SD	1.10	.54	.89	.86	1.43	1.07
26	M	3.61	3.90	3.77	4.13	3.30	3.70
	SD	1.05	.83	1.12	.78	1.42	1.09
27	M	3.82	4.20	4.38	4.38	3.20	3.96
	SD	1.00	.75	.62	.70	1.47	1.04
28	M	3.61	3.60	3.38	3.75	2.90	3.48
	SD	.94	.66	.74	1.20	1.37	1.02
29	M	3.32	2.70	2.77	2.50	2.50	2.91
	SD	.89	.90	.89	.71	1.02	.96
30	M	2.89	2.80	3.15	3.38	2.40	2.91
	SD	.82	1.33	1.17	.70	1.56	1.13
31	M	3.64	3.70	4.15	2.63	2.60	3.48
	SD	1.26	1.10	.77	.86	1.36	1.26
32	M	3.96	4.10	4.38	4.13	3.20	3.97
	SD	1.02	.70	.62	.33	1.40	.99

INFORMATION NEEDS SURVEY
ITEM STATISTICS FOR RESPONDENT CATEGORY

ITEM NO.		RURAL (K-12) EDUCATOR N=28	REGIONAL OR STATE EDUCATOR N=10	LOCAL AGENCY MEMBER N=13	POST SECONDARY EDUCATOR N=8	RURAL GOVERNMENT REPRESENTATIVE N=10	TOTAL N=69
33	M	4.18	4.00	4.31	4.50	3.30	4.09
	SD	.80	.63	.61	.50	1.62	.96
34	M	3.82	3.70	4.23	4.00	2.70	3.74
	SD	1.23	1.10	.70	.87	1.10	1.16
35	M	4.43	4.50	4.54	4.50	3.00	4.26
	SD	1.08	.50	.63	.50	1.10	1.03
36	M	2.14	2.20	2.15	2.75	1.90	2.19
	SD	.91	.98	.77	.97	1.30	1.00
37	M	1.89	2.00	2.00	2.50	2.50	2.09
	SD	.90	1.00	.88	1.00	1.28	1.02
38	M	3.32	3.70	3.62	4.50	3.80	3.64
	SD	.89	1.00	.62	.71	.98	.93
39	M	2.61	3.00	3.31	4.25	2.90	3.03
	SD	.94	1.00	.82	.66	1.14	1.06
40	M	2.89	3.80	3.38	4.00	2.40	3.17
	SD	1.01	.40	.92	1.32	1.28	1.14
41	M	4.00	4.20	3.85	4.63	3.60	4.01
	SD	.89	.60	.66	.48	.80	.81
42	M	4.04	4.20	3.92	4.13	3.70	4.00
	SD	1.12	.98	.62	.78	1.42	1.05
43	M	3.96	4.10	3.85	4.25	3.30	3.90
	SD	1.12	.94	.77	.83	1.42	1.09
44	M	3.28	3.40	3.23	3.63	2.90	3.27
	SD	.98	.66	.97	1.11	.94	.97
45	M	3.17	3.20	3.38	3.50	3.30	3.27
	SD	.91	.98	.84	.87	1.42	1.00
46	M	3.55	4 10	3.31	4.38	3.80	3.71
	SD	1.13	.70	1.07	.48	1.33	1.10
47	M	3.34	3.00	3.00	3.63	3.60	3.30
	SD	.96	.89	.78	.86	1.28	.99
48	M	2.72	2.80	3.15	3.00	2.30	2.79
	SD	1.05	1.25	.53	.71	1.10	1.01

INFORMATION NEEDS SURVEY
ITEM STATISTICS FOR RESPONDENT CATEGORY

ITEM NO.		RURAL (K-12) EDUCATOR N=28	REGIONAL OR STATE EDUCATOR N=10	LOCAL AGENCY MEMBER N=13	POST SECONDARY EDUCATOR N=8	RURAL GOVERNMENT REPRESENTATIVE N=10	TOTAL N=69
49	M	2.66	2.90	3.08	3.00	3.00	2.86
	SD	1.15	1.14	.86	1.41	1.18	1.16
50	M	3.17	3.40	3.08	3.75	2.60	3.17
	SD	.91	.92	.92	.66	1.28	1.00
51	M	3.07	3.20	3.38	4.00	3.40	3.30
	SD	.98	.75	.74	1.12	1.20	1.00
52	M	3.00	3.10	3.23	3.50	2.70	3.07
	SD	1.05	1.37	.70	.71	1.00	1.03
53	M	2.72	3.20	2.92	3.13	2.90	2.90
	SD	1.14	1.25	.92	1.05	1.04	1.11
54	M	2.48	3.00	2.62	3.25	2.60	2.69
	SD	1.07	1.26	.92	1.09	1.43	1.17
55	M	3.03	3.00	2.88	2.88	2.20	2.84
	SD	.93	1.18	.89	1.05	.98	1.02
56	M	3.10	3.50	3.08	3.63	2.60	3.14
	SD	.88	.81	1.07	.70	.80	.93
57	M	3.34	3.90	3.38	4.13	2.50	3.40
	SD	1.03	.54	.62	.60	1.20	1.01
58	M	4.00	4.30	4.23	4.63	2.80	3.99
	SD	1.17	.64	.70	.48	1.33	1.13
59	M	3.21	3.40	3.62	4.13	2.80	3.36
	SD	1.09	1.02	.92	.93	1.33	1.13
60	M	3.24	3.60	3.69	4.13	3.00	3.44
	SD	1.13	1.20	.99	.93	1.34	1.18
61	M	4.03	3.80	3.46	3.25	2.60	3.60
	SD	.81	.60	1.08	.83	1.11	1.02
62	M	3.52	3.60	3.46	3.63	3.50	3.53
	SD	.90	1.02	1.08	1.32	1.02	1.02
63	M	3.28	3.40	3.15	3.00	2.70	3.16
	SD	1.23	1.11	.66	1.00	1.42	1.15
64	M	3.52	3.80	3.77	3.38	2.90	3.50
	SD	.81	.40	.70	1.11	1.22	.91

INFORMATION NEEDS SURVEY
ITEM STATISTICS FOR RESPONDENT CATEGORY

ITEM NO.		RURAL (K-12) EDUCATOR N=28	REGIONAL OR STATE EDUCATOR N=10	LOCAL AGENCY MEMBER N=13	POST SECONDARY EDUCATOR N=8	RURAL GOVERNMENT REPRESENTATIVE N=10	TOTAL N=69
65	M	3.66	3.60	4.08	3.13	3.10	3.59
	SD	1.29	1.02	.83	1.62	1.45	1.29
66	M	3.45	3.50	3.92	4.13	3.30	3.60
	SD	1.19	.81	.83	1.17	1.10	1.10
67	M	2.83	2.90	3.08	2.88	2.80	2.89
	SD	1.21	1.04	1.14	1.54	1.47	1.26
68	M	2.90	2.30	2.92	2.50	2.60	2.73
	SD	1.09	1.10	1.07	1.12	1.43	1.17
69	M	2.86	2.40	2.62	2.50	2.30	2.63
	SD	1.07	1.11	.74	1.12	.90	1.03
70	M	2.38	2.20	2.31	2.63	1.80	2.29
	SD	.89	.98	.82	1.32	.98	.99
71	M	4.14	4.20	3.77	4.00	3.70	4.00
	SD	.90	.40	.89	.71	1.19	.91
72	M	3.72	3.33	3.31	2.75	2.60	3.32
	SD	1.01	1.05	1.32	1.30	1.50	1.27
73	M	3.59	3.60	3.92	3.38	3.50	3.61
	SD	1.13	.66	.73	.99	.92	.98
74	M	3.28	3.30	3.69	3.75	2.90	3.36
	SD	1.14	.78	.82	1.09	1.14	1.07
75	M	3.52	3.30	3.77	3.57	3.10	3.48
	SD	1.16	1.00	.80	1.05	1.14	1.08
76	M	3.69	2.90	4.15	3.25	2.90	3.50
	SD	1.12	.94	.95	1.09	1.30	1.18
77	M	2.45	2.70	3.38	2.63	2.20	2.64
	SD	1.13	.90	.74	1.22	1.17	1.12
78	M	3.28	2.90	3.08	2.50	2.40	2.97
	SD	1.05	1.14	1.00	1.00	.92	1.08
79	M	2.76	3.90	3.62	4.00	3.00	3.26
	SD	1.19	.94	.84	1.32	1.10	1.22
80	M	3.00	3.10	3.08	3.38	2.50	3.00
	SD	1.08	1.51	1.07	1.22	.92	1.17

INFORMATION NEEDS SURVEY
ITEM STATISTICS FOR RESPONDENT CATEGORY

ITEM NO.		RURAL (K-12) EDUCATOR N=28	REGIONAL OR STATE EDUCATOR N=10	LOCAL AGENCY MEMBER N=13	POST SECONDARY EDUCATOR N=8	RURAL GOVERNMENT REPRESENTATIVE N=10	TOTAL N=69
81	M	3.34	3.50	3.38	3.50	2.90	3.33
	SD	1.03	.92	1.00	1.00	.94	1.01
82	M	3.76	4.10	3.92	3.88	3.30	3.79
	SD	1.07	.70	.92	1.05	1.19	1.04
83	M	4.00	4.10	3.77	3.50	2.50	3.70
	SD	1.11	1.04	.89	1.41	1.12	1.22
84	M	3.76	3.60	3.77	3.75	2.70	3.59
	SD	1.16	.92	.89	1.09	1.42	1.18
85	M	3.41	3.50	3.08	2.88	2.70	3.20
	SD	1.22	.81	1.07	1.36	1.68	1.27
86	M	3.72	3.60	3.15	3.43	2.20	3.35
	SD	.98	.92	1.03	1.29	1.25	1.18
87	M	3.75	3.50	3.23	2.88	2.50	3.33
	SD	1.15	.92	1.25	.60	1.12	1.18
88	M	3.04	2.80	4.08	2.75	3.30	3.20
	SD	1.02	.75	.83	.83	.90	1.02
89	M	4.04	3.50	4.00	3.00	3.60	3.77
	SD	1.05	1.02	.68	1.12	1.50	1.13
90	M	2.82	3.00	3.38	3.13	2.60	2.96
	SD	1.17	.89	.84	.93	1.20	1.08
91	M	3.29	3.50	3.54	3.50	3.20	3.38
	SD	.99	1.12	.75	1.00	1.25	1.02
92	M	3.50	3.70	3.54	4.00	2.90	3.51
	SD	.98	1.10	.93	1.00	.83	1.02
93	M	3.15	3.20	3.54	3.13	2.50	3.13
	SD	.93	1.25	.93	1.17	1.02	1.07
94	M	3.50	3.60	3.75	3.38	3.60	3.56
	SD	1.21	.92	1.01	1.49	1.36	1.21
95	M	3.46	3.50	4.00	3.25	3.50	3.55
	SD	1.24	.92	.88	1.56	1.28	1.21
96	M	4.04	4.00	3.75	3.88	2.90	3.79
	SD	.91	.63	.83	.93	1.37	1.02

INFORMATION NEEDS SURVEY
ITEM STATISTICS FOR RESPONDENT CATEGORY

ITEM NO.		RURAL (K-12) EDUCATOR N=28	REGIONAL OR STATE EDUCATOR N=10	LOCAL AGENCY MEMBER N=13	POST SECONDARY EDUCATOR N=8	RURAL GOVERNMENT REPRESENTATIVE N=10	TOTAL N=69
97	M	3.89	4.00	3.77	4.13	3.00	3.78
	SD	1.14	.63	.97	.60	1.26	1.08
98	M	4.21	4.20	4.00	3.50	3.40	3.97
	SD	1.11	.75	.68	.50	1.50	1.06
99	M	3.86	4.10	4.00	4.00	3.40	3.87
	SD	1.12	.54	.55	.71	1.36	.99
100	M	3.43	3.60	3.77	3.75	3.10	3.51
	SD	1.02	.66	.97	.97	1.14	1.00
101	M	3.46	3.40	3.38	3.25	2.70	3.30
	SD	1.05	.66	.92	1.09	1.19	1.04
102	M	3.21	3.10	3.15	2.88	2.60	3.06
	SD	.98	.94	1.03	1.05	.80	.99
103	M	3.21	3.30	2.85	3.38	3.00	3.14
	SD	.98	.90	.77	.86	1.10	.95
104	M	3.39	3.30	3.62	3.63	2.80	3.36
	SD	1.21	1.27	1.21	1.22	1.25	1.25
105	M	2.89	3.30	3.00	2.88	2.50	2.91
	SD	.98	.78	1.11	1.05	1.57	1.11
106	M	3.36	3.40	3.54	3.50	3.89	3.49
	SD	1.14	.66	1.15	1.32	.74	1.08
107	M	3.46	3.20	3.92	3.63	2.70	3.42
	SD	.98	1.47	.73	1.11	1.35	1.16
108	M	4.18	4.20	3.92	3.63	3.50	3.97
	SD	1.00	.60	1.21	.99	1.28	1.08
109	M	3.69	3.89	3.31	3.88	2.70	3.52
	SD	.91	.57	1.07	.78	1.49	1.07
110	M	3.90	4.44	3.77	3.88	3.00	3.81
	SD	1.12	.68	1.05	.78	1.26	1.12
111	M	3.17	2.78	3.54	2.38	2.40	2.99
	SD	1.21	.63	1.28	.99	.92	1.17
112	M	3.34	3.11	3.00	2.88	2.80	3.12
	SD	.96	1.10	1.18	.93	.98	1.04

INFORMATION NEEDS SURVEY
ITEM STATISTICS FOR RESPONDENT CATEGORY

ITEM NO.		RURAL (K-12) EDUCATOR N=28	REGIONAL OR STATE EDUCATOR N=10	LOCAL AGENCY MEMBER N=13	POST SECONDARY EDUCATOR N=8	RURAL GOVERNMENT REPRESENTATIVE N=10	TOTAL N=69
113	M	3.03	3.11	2.92	3.13	3.60	3.12
	SD	1.07	.87	.83	.60	.92	.96
114	M	3.90	3.78	3.46	3.25	3.50	3.74
	SD	1.18	.63	1.15	1.20	1.20	1.12
115	M	3.24	3.33	3.38	3.25	2.20	3.03
	SD	1.04	.94	.84	.83	.87	1.06
116	M	2.31	2.56	3.77	3.13	2.70	2.61
	SD	1.05	.96	.70	1.05	1.42	1.16
117	M	3.72	3.78	3.23	3.88	3.00	3.70
	SD	1.01	.63	.80	.93	1.18	1.03
118	M	4.10	3.89	3.92	3.88	2.80	3.83
	SD	.92	.57	.83	.93	1.17	1.01
119	M	3.24	2.67	3.46	3.63	3.70	3.32
	SD	1.25	1.41	1.15	.99	1.27	1.27
120	M	3.24	3.11	3.38	3.13	2.90	3.19
	SD	.93	.87	.84	1.05	1.30	1.00
121	M	3.69	3.33	3.77	3.38	2.30	3.42
	SD	.91	.67	.70	.99	1.19	1.03
122	M	3.38	3.22	3.23	3.25	3.10	3.28
	SD	1.13	.92	.80	1.09	1.37	1.09
123	M	2.62	2.44	2.46	2.00	2.60	2.49
	SD	.93	.83	1.01	1.00	1.43	1.04
124	M	2.76	3.00	3.00	3.00	2.80	2.87
	SD	.97	1.05	1.04	.87	1.25	1.03
125	M	2.55	2.89	2.69	2.50	3.00	2.68
	SD	.97	.87	1.14	1.12	1.18	1.06
126	M	3.55	3.33	3.31	3.13	2.30	3.25
	SD	1.10	.82	.91	1.17	1.19	1.13
127	M	3.55	3.78	3.46	3.13	3.10	3.45
	SD	1.00	.42	.75	1.05	1.30	.99
128	M	3.21	3.33	3.38	3.75	2.80	3.26
	SD	1.19	.82	1.00	1.30	1.08	1.14

INFORMATION NEEDS SURVEY
ITEM STATISTICS FOR RESPONDENT CATEGORY

ITEM NO.		RURAL (K-12) EDUCATOR N=28	REGIONAL OR STATE EDUCATOR N=10	LOCAL AGENCY MEMBER N=13	POST SECONDARY EDUCATOR N=8	RURAL GOVERNMENT REPRESENTATIVE N=10	TOTAL N=69
129	M	3.38	3.44	3.62	3.63	2.60	3.35
	SD	1.16	.68	1.15	1.22	.80	1.11
130	M	3.86	3.44	4.00	4.13	3.30	3.78
	SD	1.20	1.07	.88	.78	1.27	1.13
131	M	4.00	3.90	4.31	3.88	3.50	3.96
	SD	1.16	.83	.72	1.45	1.43	1.16
132	M	2.93	3.50	3.54	3.50	3.00	3.20
	SD	1.00	.50	1.22	.87	1.41	1.08
133	M	3.57	4.10	4.54	4.50	3.20	3.88
	SD	1.18	1.14	.84	.50	1.08	1.15
134	M	3.57	3.60	3.92	3.88	2.90	3.58
	SD	1.12	.80	1.07	.60	1.14	1.07
135	M	3.57	3.40	3.85	3.75	3.20	3.57
	SD	1.15	1.11	.95	.97	1.17	1.11
136	M	3.75	3.40	4.08	4.00	3.50	3.75
	SD	1.21	1.02	1.00	1.00	1.36	1.17
137	M	3.25	3.10	3.31	2.63	3.30	3.17
	SD	1.06	.83	.99	1.11	1.19	1.06
138	M	3.32	3.10	3.46	3.25	2.70	3.22
	SD	.93	1.04	1.01	1.20	.90	1.02
139	M	3.96	4.10	4.38	4.25	3.60	4.04
	SD	.91	.83	.62	.83	1.11	.91
140	M	3.32	3.50	3.62	3.50	2.80	3.35
	SD	1.14	1.02	1.39	1.00	.87	1.15

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APPENDIX F

STATE BOARD OF EDUCATION
ALABAMA DEPARTMENT OF EDUCATION
Alabama Information and Development System
Room 347 State Office Building
Montgomery, Alabama 36130
Telephone 205/832-3138

-AIDS USE ONLY-
Accession No.
Date Processed / /

ALABAMA RESOURCE FILE
LOCAL SCHOOL PROMISING PROGRAM/PRACTICE

FORM NO. AID3/79

Name of Superintendent

Name of School System

Name of Program/Practice Being Nominated

By submitting the above-named program/practice for inclusion in the Alabama Resource File, we demonstrate our commitment to the value and importance of exchanging successful experiences and practices with our colleagues throughout the Alabama educational community.

To the best of our knowledge, the program/practice described herein meets the following criteria for inclusion in the Alabama Resource File. The program/-practice is:

1. **Successful** in meeting the needs it was designed to address -- (it is working for us)
2. **Cost-effective** -- (results justify expenditures)
3. **Exportable** -- (others should be able to adopt/adapt it to meet their locally identified needs)

We have made every effort to describe the program/practice accurately and realistically in order to assist interested educators in reaching a decision about its potential for meeting their local needs. Further, we affirm our willingness to share with and assist those who wish to benefit from our experiences.

Finally, we grant permission for this program/practice to be included in the Alabama Resource File and thereby to be disseminated to Alabama educators.

(Date) _____ (Signature of individual completing form) _____

(Date) _____ (Signature of local Superintendent) _____

SPECIAL NOTE: AIDS oftentimes receives requests from out-of-state educators and educational agencies for information concerning Alabama exemplary programs. AIDS does not release this information without prior consent/permission of the local superintendent in whose system the program/practice operates. Your response to the item below will guide AIDS' staff in the processing of such requests.

We hereby grant our permission for AIDS to release information relative to the program/practice described herein to interested educators outside of Alabama.

☐Yes ☐No

EXPLANATION AND DIRECTIONS FOR COMPLETING FORM: This form was designed as an efficient means of gathering certain essential descriptive information about each program/practice to be included in the Alabama Resource File. Please respond to **EACH** item as completely as possible.

Note that forced choice and multiple response items are included when possible; be sure to check **ALL** appropriate responses when so directed.

Due to the nature of some necessary information, brief narrative responses or statements are requested for certain items. Please keep in mind that the form returned to AIDS will be duplicated as submitted and provided to those requesting detailed information concerning your program/practice. For this reason, it is important that the completed form be neat and legible. (Typed copy preferred.)

Feel free to clarify or elaborate on responses to any of the items. Supplementary materials may be attached to this form if desired, but should be cross-referenced to the appropriate item number. Attachments are **NOT** to be used in lieu of a response to any given item.

1. **IDENTIFICATION** *(Provide requested information in space provided beneath each item.)*

a. Name or Title of Program or Practice

b. Name of Contact Person

c. Title/Position of Contact

d. Address (Street, City, State, Zip Code) of Contact

e. Telephone Number of Contact

f. Name of School System(s)

g. County(ies) in Which School System(s) Located

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2. FINANCIAL REQUIREMENTS

a. What is the primary funding source for this program/practice? Check one:

- ☐ Minimum Program
- ☐ Federal -- Indicate type (e.g., Title I) _____
- ☐ Other -- Specify _____
- ☐ Local

b. What was the approximate per participant start-up (implementation) cost? Please attempt to make as realistic an estimate as possible.

c. What is the approximate per participant annual operating cost? Please attempt to make as realistic an estimate as possible.

3. YEARS OF OPERATION

a. Check one:

- ☐ Less than 1 year
- ☐ 1 – 2 years
- ☐ 3 – 5 years
- ☐ 6 – 10 years
- ☐ over 10 years
- ☐ no longer in operation

b. Date program/practice implemented in system

4. VALIDATION/EVALUATION

Check all appropriate responses:

- ☐ Internal Evaluation by Developer
- ☐ External Evaluation by Consultant(s)
- ☐ No Formal Evaluation
- ☐ IVD (Identification Validation Dissemination)
- ☐ JDRP (Joint Dissemination Review Panel)
- ☐ Other (Specify) _____

5. PURPOSES (GOALS) OF PROGRAM/PRACTICE

Give brief statement of major purposes:

6. POPULATIONS SERVED BY PROGRAM/PRACTICE

a. Number of School Systems _____

b. Number of Schools _____

c. Approximate Number of Students (or other participants) Served _____

d. Approximate Number of Personnel Providing Services _____

7. DEMOGRAPHIC DATA FOR SCHOOL OR SCHOOL SYSTEM(S)

(Base each response on largest unit participating in program/practice, i.e., school or school system. Note: If more than one school is participating, respond with system data.)

a. Location is predominantly:

- ☐ Rural
- ☐ Urban
- ☐ Suburban

b. Total student enrollment (school or system(s)):

c. Total number of teachers (school or system(s)):

d. Economic base of community:

- ☐ Primarily agricultural
- ☐ Primarily industrial
- ☐ Mixed/Combined
- ☐ Other (specify) _____

e. Percentage of minority students:

- ☐ Less than 20%
- ☐ 20 – 49%
- ☐ 50 – 75%
- ☐ Greater than 75%

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8. NEEDS

a. Was the program/practice developed in response to identified needs or problems?

☐ Yes ☐ No

b. If "Yes," which of the following groups were involved in identifying these needs/problems? Check more than one if applicable:

☐ Students ☐ General Community
☐ Teachers ☐ Outside Consultant(s)/Agency(ies)
☐ Administrators ☐ Board of Education
☐ Parents ☐ Other (specify) _____
☐ Advisory Councils

9. DEVELOPMENT OF PLAN FOR PROGRAM/PRACTICE

Programs evolve in different ways. Which of the following patterns best describes the order in which this particular program/practice was developed? Check one:

☐ (1) Needs identified; (2) Objectives developed; (3) Curriculum designed; (4) Program/Practice implemented.

☐ (1) Problem recognized; (2) Curriculum designed; (3) Objectives developed; (4) Program/Practice implemented.

☐ (1) Program/Practice adopted/adapted; (2) Needs identified; (3) Curriculum modified or revised; (4) Program/Practice implemented.

☐ If none of the above depict accurately the manner in which your program/practice evolved, briefly describe the process by which this did occur.

10. SUMMARY OF NEEDS, OBJECTIVES AND ACTIVITIES

INSTRUCTIONS: In Column A below, list the major needs (or problems) which this program/practice was designed to address. Beneath Column B, enter the primary objectives developed in conjunction with the program/practice. Finally, list major or respresentative activities in Column C. (Note: You need not list all activities, only those which you think best represent the nature and approach of your program/practice.) If possible, relate objectives to the need(s) for which they were developed, and relate activities to the objectives they are designed to meet. (Note: Use brackets or any other logical symbol to depict these relationships or associations.)

Column A	*Column B*	*Column C*
Major Needs	*Primary Objectives*	*Representative Activities*

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11. TARGET POPULATION(S) SERVED

Check the characteristic(s) below which describe the primary target group (s) served by the program/practice. Check all appropriate responses; not limited to one response.

a. **Age/Grade/Learner Group**

- ☐ Infants (ages 0-3)
- ☐ Preschool (ages 3-5)
- ☐ Kindergarten (ages 5-6)
- ☐ Primary (grades 1-3)
- ☐ Upper Elementary (grades 4-6)
- ☐ Middle School (grades 5-8)
- ☐ Junior High (grades 7-9)
- ☐ Senior High (grades 9-12)
- ☐ Junior College
- ☐ Technical College
- ☐ Adult Students (18+, adult basic education)
- ☐ Community Groups (non-credit community education)
- ☐ Teachers
- ☐ Administrators/Supervisors
- ☐ Paraprofessionals
- ☐ Nonprofessionals
- ☐ Other _____

b. **Special Characteristics**

- ☐ Learning Disabled
- ☐ Average
- ☐ Low Achievers
- ☐ Potential Dropouts
- ☐ Chronic discipline/attendance problems
- ☐ Gifted (indicate type of giftedness) _____
- ☐ Physically Handicapped (indicate type (s) of handicap) _____
- ☐ Mentally Handicapped (indicate type(s) of handicap) _____
- ☐ Knowledge/Skill Deficiency (school-related, not inherent in learner)
- ☐ Minority
- ☐ Female
- ☐ Economically Disadvantaged
- ☐ Unemployed/Underemployed
- ☐ Other _____

c. What is the total number of students (or other primary participants) involved in the program/practice? _____

d. What is the total number of classes participating in this program/practice? _____

e. What is the total number of schools participating in the program/practice? _____

f. Was the program/practice initially implemented with the total population for which it was designed? ☐ Yes ☐ No

If "No" explain how the program/practice was piloted, i.e., how many individual students, classes, schools were involved in the piloting, etc.?

g. Are there plans to extend or expand the program/practice to serve additional students in your system (s)? ☐ Yes ☐ No

If "Yes" explain.

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12. SPECIAL FEATURES OF PROGRAM/PRACTICE

a. Which of the following best describes the relationship of this program/practice to other ongoing programs within your school or school system? Check most appropriate response.

This program/practice is:

☐ Self-contained; ☐ An integral part of a broader program; ☐ Complements and/or supplements another program (but is not an integral part of it).

b. Which of the following best describes the relationship of this program/practice to past or present programs/practices that had similar goals or purposes? Check most appropriate response.

This program/practice:

☐ Replaced a program/practice that had similar goals.

☐ Supplemented a previously existing program/practice.

☐ Filled a previously existing void.

c. To your knowledge, which of the following best describes the origin of this program/practice? Check most appropriate response.

This program/practice:

☐ Originated within this school system.

☐ Was developed commercially and adapted to local situation.

☐ Was developed in another local school system and adapted to local needs.

13. MATERIALS

a. Are any special materials needed for the operation of this program/practice? ☐ Yes ☐ No

b. If "Yes" to 13a, were these materials:

☐ Developed locally by teachers and other staff members?

☐ Purchased from commercial firm?

☐ Acquired from another school system?

☐ Other? (indicate) _____

c. If "Yes" to 13a, were these materials:

☐ Acquired or developed specifically for this program/practice? or

☐ Already in use somewhere in the system?

d. List below the titles of textbooks and/or other instructional materials, teachers'/administrators' guides, and other special materials used in connection with this program/practice.

14. EQUIPMENT

a. Is any special equipment required for the operation of this program/practice? ☐ Yes ☐ No

b. If "Yes" to 14a, was this equipment:

☐ Purchased or developed specifically for this program/practice? or

☐ Already available within the system?

c. If "Yes" to 14a, was this equipment:

☐ Purchased from a commercial firm? or

☐ Designed and built by local personnel?

d. List below any equipment that is essential to the operation of the program/practice.

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15. FACILITIES

a. Are any special facilities needed for the operation of this program/practice? ☐ Yes ☐ No

b. If "Yes" to 15a, indicate the type of facilities required:

16. STAFFING

a. List beside the appropriate classification below the number of staff members required to operate the program/practice.

CLASSIFICATION	TOTAL NUMBER	
	Full-time	Part-time
Teachers		
Paraprofessionals		
Administrators/Directors/Supervisors/Coordinators		
Non-professionals		
Volunteers		

b. Is the successful implementation and operation of the program/practice dependent upon involved staff members' possessing special skills and/or training?

☐ Yes ☐ No

If special skills are required, describe these below.

If special training is necessary, indicate the nature of such training (e.g., type, cost, time requirements, etc.).

c. Which of the following best describes the nature of the instructional staff members' involvement in this program/practice?

☐ Responsibility assumed in addition to other regular duties or assignments (less than half time)

☐ Responsibility assigned as a portion of regular duties

☐ Major responsibility constituting at least half of work load

17. INVOLVEMENT/COMMITMENT

a. Which of the following were involved in the initial planning and implementation of the program/practice? Check more than one if applicable.

☐ Teachers
☐ Students
☐ Principals
☐ Central office staff
☐ Superintendent
☐ Board of Education
☐ Parents/other community groups
☐ Advisory Council (s)
☐ Other _____

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b. Has any significant opposition or resistance emerged to the implementation and operation of the program/practice? ☐ Yes ☐ No

If "Yes," from which of the groups listed in 17a above has this opposition or resistance originated, and what strategies have been used to counter such problems?

c. Have any of the groups listed in 17a above offered particularly important support to the program/practice? ☐ Yes ☐ No

If "Yes," indicate which group (s) and comment concerning the type and extent of their support.

18. EVALUATION

a. Are the objectives of the program/practice being achieved? ☐ Yes ☐ No

b. On which of the following did you base your response to question 18a? Check all appropriate responses.

- ☐ Observation/Professional judgment—Indicate the individual(s) or group(s) involved: _____
- ☐ Internal evaluation incorporating formal data collection and analysis (e.g., pre-test and post-test, etc.)
- ☐ Evaluation by consultants external to school system
- ☐ Other _____

c. Summarize the major procedures and findings related to each type of evaluation employed (for each item checked in 18b above).

d. Did the program/practice produce unanticipated outcomes or results? ☐ Yes ☐ No

If "Yes," list and comment briefly concerning each beneath the appropriate heading.

POSITIVE EFFECTS:

NEGATIVE EFFECTS:

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19. ADOPTION/ADAPTATION POTENTIAL

a. This program/practice lends itself to the following use(s) by interested schools/school systems. Check all appropriate responses.

- ☐ Adoption (Replicating program/practice as it is operating in this system).
- ☐ Adaptation (Utilizing the central concepts and features of the program/practice, but modifying procedures, etc., to meet local needs/circumstances).
- ☐ Partial Adoption (Selected components or features of the program/practice could be extracted and used in conjunction with ongoing programs/practices).
- ☐ Other _____

b. Has the success of the program/practice depended greatly upon one or more of the factors listed below? ☐ Yes ☐ No

If "Yes," check all applicable responses:

- ☐ Special attributes of project staff
- ☐ Community climate and support
- ☐ Magnitude, intensity, or other special feature of the problem(s) and/or need(s) existing at the time the program was implemented--Specify the factor if possible, _____
- ☐ Other _____

c. Has the program/practice been adopted or adapted in another school or school system? ☐ Yes ☐ No

If "Yes," indicate school (s) and location.

d. In which of the following ways can interested educators secure additional information concerning this program/practice? Check all appropriate responses.

- ☐ Request available printed descriptive materials from contact person
- ☐ Telephone conversations with contact person
- ☐ Written request to contact person for answers to specific questions
- ☐ On-site visitation (arrangements should be made through contact person)
- ☐ Other _____

e. Which of the following are essential to the adoption/adaptation of this program/practice by another school? Check all appropriate responses.

- ☐ Specialized training for staff
- ☐ Use of designated instructional materials
- ☐ Use of specialized equipment
- ☐ Availability of appropriate facilities
- ☐ Supplemental funding
- ☐ Other _____

f. Which of the following services are available to representatives of schools/school systems interested in adopting/adapting this program/practice? Check all appropriate responses. Indicate with a checkmark whether or not there are financial charges for any of the services provided.

- ☐ In-depth orientation for key personnel
  Charge: ( ) Yes ( ) No
- ☐ Training of individuals to be involved in implementation and operation
  Charge: ( ) Yes ( ) No
- ☐ Provision of instructional materials
  Charge: ( ) Yes ( ) No
- ☐ Provision of director's manual, administrator guide, teacher guide, etc.
  Charge: ( ) Yes ( ) No
- ☐ Provision of evaluation design
  Charge: ( ) Yes ( ) No
- ☐ Provision of project proposal or other detailed plan
  Charge: ( ) Yes ( ) No
- ☐ On-site (of adopter/adapter) consultation by appropriate program personnel
  Charge: ( ) Yes ( ) No
- ☐ Visitation by adopter/adapter personnel to program/practice site
  Charge: ( ) Yes ( ) No
- ☐ Other (Specify) _____

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SUMMARY OF PROGRAM/PRACTICE

DIRECTIONS: In the space below provide a summary of the program/practice. When applicable, indicate the type of program (i.e., subject or problem area), its intended audience (s), its purposes or goals, important characteristics and/or distinguishing features, and major outcomes or results. Limit the summary to 200 words. This summary will be included as part of the document resume which will be disseminated to educators throughout the State.

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INDEXING OF PROGRAM/PRACTICE

DIRECTIONS: In order that AIDS may accurately index this program/practice to the Alabama Resource File, we need your cooperation in completing this section. Following are key terms or descriptors which have been categorized into eight topical areas representing significant indexing points. Place a checkmark beside each term which describes or characterizes some important feature or dimension of your program/practice. While you may check as many terms as you deem appropriate in each category, you are encouraged to be selective and discriminating in the choices you make. (If possible/applicable, check at least one descriptor beneath each of the eight categories, in turn. If you choose to use more than 3-5 descriptors beneath each category.)

TYPE OF ACTIVITY

- ☐ Administrative Organization
- ☐ After School Programs
- ☐ Alternative Schools
- ☐ Attendance Services
- ☐ Class Management
- ☐ Classroom Research
- ☐ Community Education
- ☐ Curriculum Development
- ☐ Curriculum Guides
- ☐ Educational Innovation
- ☐ Exchange Programs
- ☐ Facility Improvement
- ☐ Inservice Programs
- ☐ Instructional Improvement
- ☐ Mainstreaming
- ☐ Migrant Education
- ☐ Parent Participation
- ☐ Performance (Competency) Based Education
- ☐ Program Development
- ☐ Scheduling
- ☐ School Community Programs
- ☐ Shared Services
- ☐ Staff Improvement
- ☐ Student Evaluation (i.e., report cards)
- ☐ Summer Programs
- ☐ Teacher Improvement
- ☐ Other (Specify) _____

INSTRUCTIONAL DIVISION/LEVEL

- ☐ Adult Basic Education
- ☐ Elementary Education
- ☐ High School Equivalency Programs
- ☐ Intermediate Grades
- ☐ Junior Colleges
- ☐ Junior High Schools
- ☐ Preschool Education
- ☐ Primary Education
- ☐ Secondary Education
- ☐ Senior High Schools
- ☐ Other (Specify) _____

SUBJECT AREA/AREAS (CONTENT)

- ☐ Adapted Physical Education
- ☐ Aesthetic Education
- ☐ Agribusiness
- ☐ Arithmetic
- ☐ Art
- ☐ Athletics
- ☐ Basic Skills
- ☐ Business Education
- ☐ Career Education
- ☐ Computers
- ☐ Driver Education
- ☐ Drug Education
- ☐ Ecology
- ☐ Elementary School Mathematics
- ☐ Environmental Education
- ☐ Fine Arts
- ☐ Guidance Counseling
- ☐ Health Education
- ☐ Home Economics Education
- ☐ Language Arts (Specify course if applicable)
- ☐ Mathematics (Specify course if applicable)
- ☐ Metric System
- ☐ Music
- ☐ Nutrition
- ☐ Physical Education
- ☐ Problem Solving
- ☐ Psychomotor Skills
- ☐ Reading
  - ☐ Basic Reading
  - ☐ Beginning Reading
  - ☐ Interdisciplinary Approach
  - ☐ Reading Comprehension
  - ☐ Reading Games
  - ☐ Reading Improvement
  - ☐ Reading Readiness
  - ☐ Reading Skills
  - ☐ Reading Tests
  - ☐ Remedial Reading
  - ☐ Sequential Reading Programs
- ☐ Remedial Instruction
- ☐ Remedial Programs
- ☐ Safety Education
- ☐ Science (Specify course if applicable)
- ☐ Secondary School Mathematics
- ☐ Second (Foreign) Language Learning (Specify course if applicable)
- ☐ Sex Education
- ☐ Social Studies (Specify course if applicable)
- ☐ Special Education (Specify type)
- ☐ Spelling
- ☐ Vocabulary
- ☐ Vocational Agriculture
- ☐ Vocational Education (Specify course if applicable)
- ☐ Writing Skills (Specify course if applicable)
- ☐ Other (Specify)

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INSTRUCTIONAL MODE

- ☐ Continous Progress Plan
- ☐ Cross Age Teaching
- ☐ Diagnostic Teaching
- ☐ Experiential Learning
- ☐ Field Trips
- ☐ Heterogeneous Grouping
- ☐ Homogeneous Grouping
- ☐ Independent Study
- ☐ Individualized Curriculum
- ☐ Individualized Instruction
- ☐ Interdisciplinary Approach
- ☐ Large Group Instruction
- ☐ Learning Modules
- ☐ Multisensory Learning
- ☐ Nongraded Classes
- ☐ Open Education
- ☐ Peer Teaching
- ☐ Performance Based Education
- ☐ Resource Room Programs
- ☐ Self Directed Classrooms
- ☐ Short Courses
- ☐ Small Group Instruction
- ☐ Study Abroad
- ☐ Team Teaching
- ☐ Television
- ☐ Tutoring
- ☐ Other (Specify)

_____

_____

_____

LEARNER CHARACTERISTICS

- ☐ Average
- ☐ Blind
- ☐ Culturally Disadvantaged
- ☐ Deaf
- ☐ Dropouts
- ☐ Economically Disadvantaged
- ☐ Educationally Disadvantaged
- ☐ Elementary School Students
- ☐ Emotionally Disturbed
- ☐ Exceptional Students
- ☐ Gifted
- ☐ Grade 1
- ☐ Grade 2
- ☐ Grade 3
- ☐ Grade 4
- ☐ Grade 5
- ☐ Grade 6
- ☐ Grade 7
- ☐ Grade 8
- ☐ Grade 9
- ☐ Grade 10
- ☐ Grade 11
- ☐ Grade 12
- ☐ Handicapped
- ☐ Hearing Impaired Children
- ☐ High Achievers
- ☐ High School Students
- ☐ Junior High School Students
- ☐ Kindergarten Children
- ☐ Learning Difficulties
- ☐ Learning Disabilities
- ☐ Low Ability Students
- ☐ Mentally Handicapped
- ☐ Partially Sighted
- ☐ Physically Handicapped
- ☐ Potential Dropouts
- ☐ Retarded Children
- ☐ Retarded Readers
- ☐ Slow Learners
- ☐ Socially Disadvantaged
- ☐ Speech Handicapped
- ☐ Talented Students
- ☐ Other (Specify)

_____

_____

_____

SPECIAL FEATURES

- ☐ Accelerated Programs
- ☐ Behavioral Objectives
- ☐ Cooperative Programs
- ☐ Cost Effectiveness
- ☐ Criterion Referenced Tests
- ☐ Discipline
- ☐ Evaluation
- ☐ Learning Laboratories
- ☐ Mastery Learning
- ☐ Middle Schools
- ☐ Needs Assessment
- ☐ Pass Fail Grading
- ☐ Peer Evaluation
- ☐ School Community Cooperation
- ☐ Screening Tests
- ☐ Self Concept
- ☐ Space Utilization
- ☐ Student Attitudes
- ☐ Student Motivation
- ☐ Suspension
- ☐ Teacher Attitudes
- ☐ Tests
- ☐ Other (Specify)

_____

_____

_____

STAFF

- ☐ Assistant Principals
- ☐ Beginning Teachers
- ☐ Counselors
- ☐ Differentiated Staffs
- ☐ Elementary School Teachers
- ☐ Librarians
- ☐ Paraprofessional School Personnel
- ☐ Preschool Teachers
- ☐ Principals
- ☐ Remedial Teachers
- ☐ School Nurses
- ☐ Secondary School Teachers
- ☐ Special Education Teachers
- ☐ Superintendents
- ☐ Teacher Aides
- ☐ Vocational Education Teachers
- ☐ Volunteers
- ☐ Other (Specify) _____

TYPE OF MATERIALS

- ☐ Audiovisual Aids
- ☐ Newspapers
- ☐ Programmed Texts
- ☐ Student Developed Materials
- ☐ Supplementary Textbooks
- ☐ Teacher Developed Materials
- ☐ Textbooks
- ☐ Workbooks
- ☐ Worksheets
- ☐ Other (Specify)

_____

_____

_____

APPENDIX G

Summary of Data Sources Which Were Surveyed

A number of relevant social data bases currently exist. These include: the U.S. Census, NCHS, CBER, SIDH, Dialoge, PTS, NCES, and NCHEMS. Appendix displays a tally of the kinds of data currently available from some of these sources relative to the Information System Needs Questionnaire.

Census

The Bureau of the Census is a function of the United States Department of Commerce. The U. S. Constitution mandates the Census with providing, at ten-year intervals, information which assists in providing equal representation of voters within geographical districts. The U.S. Census provides much more information than this however. In addition to the County and City Data Book, a statistical abstract supplement released annually by the Census, the Bureau publishes the Pocket Data Book, U.S.A., a biennial graphic and tabular presentation of summary statistics; the Directory of Federal Statistics for Local Areas, 1976, a guide to sources of Federal statistics; the Congressional District Data Book, 93d Congress and Congressional District Data, 94th Congress; and Historical Statistics of the United States, Colonial Times to 1970.

There are six counts of the Census. These are:

1. First Count - mandated by Constitution, to be submitted within one year. The 1980 decennial Census is to be presented to Congress by January, 1981. Provides population number, number of voting age residents, sex and social data.

2. Second Count - contains 350,000 cells of information is similar to the First Count but has more sociological categories and is more detailed.
3. Third Count - provides information for urban blocks. It has 250 cells of information for 1.5 M urban blocks.
4. Fourth Count - provides detailed information from sample files used to prepare tables for Census of Population, Volume 1, Chapter C and the "Census Tract Reports." This information contains detailed accounts for tracts and other small areas. The Fourth Count for the 1980 Census is anticipated to be available for use by mid-1982.
5. Fifth Count - contains 800 cells on population, and housing data for zip code areas and is produced for business interest purposes.
6. Sixth Count - contains 260,000 cells of information on states, small and large cities (greater than 100,000 population) and provides detailed crosstabulations.

Beginning with the 1980 Census rural areas may be better represented as the "long form" of the Census will be given to 1 in 2 persons of areas with fewer than 5,000 residents and 1 of 6 persons in areas of greater than 5,000 population. Accounts for rapid population shifts may be more detailed and timely in the future as the Census Bureau intends to survey every five years instead of every ten years.

Detailed Census information on rural areas and small towns is best obtained through the use of Fourth Count Census data. There are three files of Fourth Count data which provide 13,000 cells of data on 35,000

Census tracts and 35,000 County Census Divisions (CCDs). This information is available in printed form or through computer tapes and is available either directly from the Census Bureau in Washington or through State Data Centers (see Appendix for listing of 10 southern states centers). In Alabama the State Data Center is in Tuscaloosa. There are 14 field offices, one at Auburn University (Office of Public Service and Research). These field offices have printed Census material, detailed data and access to Census tapes. ARIS, the Alabama Resources Information System is a tape to disc system available from the School of Engineering at Auburn University containing Fourth Count Census data files. This system was created through grants from NASA and the Alabama Development Office.

Fourth Count Census data contains three files. File A contains population counts in complete tracts, File B contains population counts in minor civil revisions or Census County Divisions (CCDs), File C contains Fourth Count tallies for populations in selected census areas. Appendix contains detailed descriptions of tape formats, file sizes and tape contents.

Other Census information is obtainable through CENSLIST, a tabulation service coordinated by Larry Carbough (301-763-2400), or GBF and DIME Systems, coordinated by Robert LaMacchia (301-763-7315). These services provide for the development of customer-ordered special tables or tabulations.

NCHS

The National Center for Health Statistics is a source of health related data for U.S. citizens NCHS produces and dessiminates various

types of data formats. Included among these is the Standardized Micro-Data Tape transcripts. As of March 1979, the Center provided 22 different public access data sets listed below:

1. Master Facility Inventory Data, hospitals 1971-1976
2. Master Facility Inventory Data, nursing homes and other health facilities, 1971, 1973, and 1976
3. Hospital Discharge Survey Data, 1970-1975
4. National Ambulatory Medical Care Survey Data, 1973-74, 1975, and 1976
5. National Nursing Home Survey Data 1969, and 1973-74
6. Vital Statistics Natality, detail between 1969 and 1976
7. Vital Statistics, local area summary, 1968 to 1976
8. Vital Statistics Nalality, State Summary, 1968 to 1976
9. Vital Statistics Mortality, detail, 1968 to 1976
10. Vital Statistics Mortality, local area summary, 1968 to 1976
11. Vital Statistics Mortality, cause-of-death summary, 1968 to 1976
12. Vital Statistics Marriage, detail, 1968 to 1976
13. Vital Statistics Divorce, detail, 1968 to 1976
14. National Survey of Family Growth Data, 1973
15. Natality Followback Surveys, 1964-66, 1967-69 and 1972
16. Infant Mortality Followback Survey, 1966-68
17. Mortality Followback Survey, 1966-68
18. Health Interview Survey Data, 1969-76
19. Health Examination Survey Data, Cycle 1: Adults; 18-79 years
    a) Demographic characteristics
    b) Psychological distress

c) Physical measurements
d) Cardiovascular
e) Arthritis
f) Dental
g) Diabetes

20. Health Examination Survey Data, Cycle II, children, 6-11 years

21. Health Examination Survey Data, Cycle III, youths, 12-17 years

22. HANES I Basic Data Sets (include specific physiological data, i.e., EKG to 24-hour Food Consumption Intake

The number of records varies with each file from fewer than 10,000 sampled individuals or households to 120,000 persons.

CBER

The Center for Business and Economic Research is located at Tuscaloosa campus of the University of Alabama in the College of Commerce and Business Administration and is a repository for business, economic and demographic data within the State of Alabama. This center holds information and statistic which relate to the economy of Alabama and for public research and reference purposes.

Data are available in both printed and magnetic tape form on most files.

One of the files, Education, reports the following list of data elements for scholastic years (ending June 30) and fiscal years (ending September 30) for years 1952, 1954, 1956, 1958, 1960-1976 in county and city school systems.

Enrollment by grade groups and grades, by race

Attendance--aggregate and average daily by grade groups

Pupil dropouts by grade groups

Length of term by grade groups

Transported pupils, number of days, and attendance

Transportation--miles traveled, vehicles, route length, trips, seating capacity, expenditures

Administrative, supervisory, and other personnel

Teaching positions by grade groups and race

Teachers by certificate and years experience, by race

Revenues and receipts by source--handled and not handled by custodian of school funds

Payments by type or purpose--handled and not handled by custodian of school funds

Vocational education--teachers, enrollment by secondary classes

State-owned textbooks--number and cost

Statistical information for Alabama

Crippled Children's Service and vocational rehabilitation

School lunch and special milk programs

State educational institutions--universities, colleges, junior colleges, technical colleges or schools

- Personnel
- Enrollment
- Graduates
- Funds available by source
- Expenditures and balance

Private, denominational, parochial schools

- Enrollment
- Graduates
- Term Length
- Teachers--number with valid certificates

SIDH

The Southern Index of Data Holdings was created by the Southern Growth Policies Board (SGPB) as part of the Southern Economic Development

Project. It is a means of generating data to support the regional analysis of social, economic and environmental conditions and to assess the impact of public policies on these conditions; (Liner, 1978)

Economic and Demographic data on Southern states, their counties and cities is currently stored on computer at Research Triangle Park, North Carolina for reference purposes. The SGPB plans to extend this data base by adding certain socioeconomic, fiscal, and physical variables that are designed to aid in developmental planning activities and policy decision making. A broad preliminary listing of data categories follows:

1. Population characteristics
2. Geographic characteristics
3. Housing characteristics
4. Economic characteristics (including business and industrial activity)
5. Governmental characteristics (including structures, finances, and programs)
6. Public Service Facilities
7. Health and Welfare indicators

Information generated from for each of these categories comes from two primary sources, the United States Census and from a bureau of the United States Commerce Department, the Bureau of Economic Analysis (BEA). All of the U.S. Census tapes and yearly updates of estimated information (except for the year immediately preceeding the next decennial Census, for example 1979) are used in the derivation of indicators which are believed to address regional economic and developmental issues.

The level of aggregation and thus detail, varies with each of the indicators. These range from regional, to state, to county, to local SMSA's. In other words, while some of the data is compiled for areas which are as small as places greater than 2500 in size, some; in fact, most of the data is specific only at the county level or for cities of around 50,000 population.

The BEA tapes used by SIDH gave county level information on income, employment, and farm income and expenditures. Some of this information is estimated on a monthly basis as a function of the Gross National Product. Some of the information is, therefore as much as two years behind the state or county level outlevel of breakout.

SIDH, like many other information-gathering and dissimilation projects, is awaiting the most recent Census data. Hopefully, the 1980 Census summary tapes will provide better detail on regional, state, county, and city data which will require less effort and expense to become useful information for policy makers and planners at various sub-national levels.

DIALOG

Dialog is a data base which contains a large number of files, many of which are relevant for rural education and rural development.

SDC, Systems Development Corporation, BRS, Biographical Retrieval Service, Inc., and the Lockheed Information Systems provide interactive, online access to these files.

Predicasts, discussed as a separate section, is available through Dialog and contains some numeric information. However, the bulk of information available through Dialoge is literature or report type data.

The following data bases are believed to contain potentially useful information for rural schools and development:

.ERIC, the Educational Resources Information Center. This database consists of two main files: RIE, Resources in Education, identifying significant, timely education research reports; and CIJE, Current Index of Journals in Education, an index of more than 700 educational publications. ERIC file data is available beginning in 1966 on Dialogue, has about 3,000 monthly updates, and in 1977 contained about 280,000 citations.

.NTIS, the National Technical Information Service, includes government-sponsored research, analyses, and journal articles. Dialog has government reports dating from 1964 and the NTIS database represents reports from over 300 federal government agencies. The file is updated biweekly (approximately 5,000 citations per month) and in 1979 contained over 750,000 document/data records. NTIS also publishes bibliographic searches which are prepared by its own analysts in anticipation of user needs. Products are available in paper copy, microfilm or magnetic tape form.

.Social Scisearch is an international, multidisciplinary database covering social, behavioral and related sciences, education research, community health, and urban planning and development are included among the subjects covered by this database.

.AIM/ARM is a specialized index for locating materials on vocational and technical education.

.AGRICOLA, Agricultural Online Access, is a database provided by the Science and Education Administration, Technical Informations Systems of the U.S. Department of Agriculture. Atalions are available covering agricultural information as well as human nutrition, and rural sociology.

.Foundation Directory provides descriptions for 2,500 foundations which make grants of $500,000 or more annually and is "nongovernmental, nonprofit."

.Foundations Grants Index contains information on grants awarded by philanthropic foundations.

.Sociological Abstracts covers literature in sociology and related disciplines, including rural and urban sociology, demography, and community planning and development.

.NICEM, the National Information Center for Educational Media lists information on nonprint education media.

.Exceptional Child Education Abstracts is a database containing published and unpublished information on education of handicapped and gifted school children.

.USDA/CRIS the Current Research Information System of USDA, provides access to agriculturally related research information covering a wide range of topics which include housing, rural development, education and community development.

.NICEM/NIMIS is a database of the National Information Center for Special Education Materials and provides information covering audiovisual, print, braille, equipment, and special devices for handicapped persons.

.Population Bibliography is the largest single database available on population topics. It is international in scope and emphasizes socio-economic aspects of developing notions and the southeastern United States.

.U.S. Public School Directory. This file is produced by the National Center for Education Statistics (NCES) and includes information on public elementary and secondary day schools. Each record contains the name and address of the school, the local education agency, the type of school, high and low grade spans served, the number of full-time equivalent teachers, the number of students and the ratio of students to teachers.

PTS

The Predicast Terminal System provides both data and literature information. The four literature databases contain digests of articles from newspapers, journals and studies which might be accessed geographically, by industry, by event or by company. The literature files include:

1) Prompt, a file available on Dialog which includes technical survey, marketing dean, annual report data and concentration data for industry;

2) F & S Indexes (Funk & Scott), covering domestic and international industrial information;

3) Federal Index, a series of government-related briefs from the Congressional Record, the Federal Register, the Washington Post, and other sources; and

4) Chemical Industry Notes.

The PTS statistical databases contain seven files:

1) U.S. Forecast Abstractions - covering historical base data and forecasts for marketing information, imports, exports, sales, profits and specific areas such as population, government, transportation, and agriculture.

2) U.S. Basebook - contains annual data on areas such as services, transportation, population and prices.

3) International Forecast Abstract contains abstracts on published forecasts for non-United States countries and covers general economies, industries, products and end-use data.

4) International Basebooks contains historical data for non-U.S. products and industries. These include service industries.

5) PTS Composites - contains time series information on population, employment, GNP, per capita income, production or use of major materials, products, energy, and vehicles.

6) ELS Plants and Nonmanufacturing gives data and classifies industrial plants and nonmanufacturing establishments in the U.S.; gives estimates by geographical regions (County Business Patterns), industry control totals, and corporate control totals.

NCES

National Center for Education Statistics is mandated to review and report on educational activities; portraying the condition of education in the United States and abroad.

The purpose of the Center is to analyze statistics, to assist State and local education agencies and institutions in devising and implementing statistical systems. The two major objectives of NCES are: 1) the development and maintenance of education statistics; monitoring trends in elementary, secondary, and postsecondary education and 2) the provision of statistical services to maximize the utility and accessibility of NCES data. NCES long-term strategies include:

- .Initiating a national longitudinal study of high school sophomores and seniors to determine participation in certain Federal proposals, examining school dropout data and to study the relationship between high school process and postsecondary attainment and career choice.
- .Establishing a school district data base system that can be used to assess equilization of resources for elementary-secondary education.
- .Collecting enrollments and program completions in vocational education to complement State demand data in particular occupations.
- .Assessing States, school districts, and institutions to develop comparable statistical systems and to report data.

NCES provides information concerning agency and institutional enrollments, staff, finances, student participation in education programs and information from libraries, museums and educational broadcasting stations.

The Centers activities between 1979 and 1980 included studies regarding trends in public education, ir private schools, in school finance and teacher supply/demand characteristics.

NCHEMS

The National Center for Higher Education Management Systems provides research and development activities for planning and management of post-secondary educational institutions. Its products include publication of a wide variety of titles covering data definition, systems analysis, state-level planning and the use of models in decision making.

While NCHEMS does not directly relate to elementary and secondary education in rural areas it does provide information relevant to post-secondary education. Consequently, its indirect link can be established as it provides information relevant to the training of educators, administrators and policy makers from within these areas. The IEP or Information Exchange Procedures is a basic data set of information on postsecondary institutional characteristics, student enrollment and characteristics, personnel resources, finances, costs by discipline and program as well as student outcomes. The SLIB, State-Level Information Base is designed to assist in the development of a planning-centered information base and includes data by state about student/consumer demand for postsecondary education, state-level needs for educational services, institutional and programmatic functions, institutional resources and financing postsecondary education.

APPENDIX

Listing of 10 Southern States Census Summary Depositories

Alabama: Attention: Mr. Edward Rutledge, Manager
Alabama State Data Center
Center for Business and Economic Research
University of Alabama
P. O. Box AK
University, AL 35486
(205) 348-6191

Arkansas: Attention: Dr. Forrest Pollard
Industrial Research and Extension
University of Arkansas
Box 3017
Little Rock, AR 72203
(501) 371-1971

Attention: Ms. Joan Roberts
Office of the Governor
State Federal Relations
Little Rock, AR 72201
(501) 371-2611

Florida: Florida has tapes for all states.
Attention: Ray Jones
Census Access Program
University of Florida Library
Library West
Gainesville, FL 32011
(904) 392-0361

Georgia: Attention: Tom Wagner
Office of Planning and Budget
State of Georgia
270 Washington Street, SW
Atlanta, GA 30334
(404) 656-2191

Kentucky: Attention: Dr. James M. Brockway
Urban Studies Center
University of Louisville
Garden Court
Altavista Road
Louisville, KY 40205
(502) 588-6626

APPENDIX (continued)

Louisiana: Attention: Leigh Harris
State Data Center
4528 Bennington Avenue
Baton Rouge, LA 70808
(504) 925-4584

Mississippi: Attention: Ellen S. Bryant
Department of Sociology
Mississippi State University
State College, MS 39762
(601) 325-5024

North Carolina: Attention: Karan Bunn
State Data Center
North Carolina Department of Administration
Division of State Budget and Management
116 West Jones
Raleigh, NC 27603
(919) 733-7061

South Carolina: Attention: Bobby Bowers
South Carolina Budget Control
Columbia, SC
(803) 758-3986

Tennessee: Attention: Dr. Andrew S. Loebl
Regional and Urban Studies
Information Center
Oakridge National Laboratory
Oakridge, TN 37830
(615) 574-5966

APPENDIX H

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AVAILABILITY OF CRITICAL INFORMATIONAL ITEMS BY SELECTED DATA BASES

INFORMATION ITEMS	INFORMATION SOURCE State Data Systems a)	4th Count U.S. Census	Dialog b)	PTS c)	NCHS d)	CBER e)	SIDH f)	NCES g)
I. Student Data	100% Yes							
a. Past academic performance	43% Yes	No	No	No	No	No	No	Some
b. Age	43% Yes	(15% sample)	No	No	No	15% sample	15% sample	Some
c. Grade level	Yes	(15% sample)	Yes	No	No	15% sample	No	Some
d. Race	86% Yes	Aggregate Only	No	No	Aggregate	Aggregate	Aggregate	Some
e. Educational attainment of Parents	28% Yes	Aggregate Only	No	No	No	Aggregate	Aggregate	Some
f. Attitudes toward education	14% Yes	No	No	No	No	No	No	Some
g. Attitudes toward self	No	No	No	No	Yes Aggregate Sample	No	No	Some
h. Life goals	14% Yes	No	No	No	No	No	No	Some
i. Work values	No	No	No	No	No	No	No	Some
II. School Systems Data								
a. Expenditure per pupil	86% Yes	No	No	No	No	No	No	Some
b. Total budget amount	86% Yes	No	No	No	No	No	No	Some
c. Proportion of funds from local, state and "soft money" sources	86% Yes	No	No	No	No	No	No	Yes
d. Total student enrollment	100% Yes	(15% sample)	Yes	No	No	15% sample	15% sample	Yes
e. Average daily attendance	71% Yes	No	No	No	No	No	No	Yes
f. Student/ teacher ratio	100% Yes	Aggregate Only	Yes	No	No	Aggregate	No	Aggregate
g. Curricular offerings	57% Yes	No	No	No	No	Some	No	Yes
h. Vocational education facilities	100% Yes	No	No	Yes	No	Yes	No	Yes
i. Parent/ teacher organization activities	57% Yes	No	No	No	No	No	No	Some
III. Community Data								
a. Income level and distribution	57% Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
b. Population density	57% Yes	Yes	No	Yes	Sample	Yes	Yes	Yes
c. Mass media availability	57% Yes	Indirectly	Yes	Yes	No	Yes	Yes	Some
d. Accessibility of services, cultural items, and other resources	14% Yes	Indirectly	Yes	Yes	Health Services	Yes	Some	Some
e. Attitudes toward education	28% Yes	No	No	No	No	No	No	Some
f. Satisfaction with local schools	28% Yes	No	No	No	No	No	No	Some
g. Literacy rate	43% Yes	Yes	No	Yes	Some	Some	Some	Some
h. Recreational facilities availability and use	28% Yes	Indirectly	Yes	Yes	No	No	Some	No
i. Rural development activities	71% Yes	Indirectly	Yes	Some	Some	Some	Some	No
j. Political participation and efficacy	71% Yes	No	Yes	Yes	No	Some	No	No

a) Percentage of participating states reporting 50% or more certainty of data access.
b) Available on one or more Dialog files
c) Predicast Terminal System has some numeric data files
d) National Center for Health Statistics
e) Center for Business and Economic Research. The Alabama State Data Center for U.S. Census Data on Alabama. Florida's data center has 1970 census data for all states.
f) Southern Index of Data Holdings, a combination of U.S. Census and Bureau of Economic Analysis data
g) National Center for Education Statistics.